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ABSTRACT

These health curriculum guidelines were designed for teachers of secondary students. Four major topic areas are covered: 1) anatomy, physiology, tissues, systems, heredity, physical activity, and nutriition: 2) family structures, functions, and responsibilities: 3) values, stress, and drug abuse; and 4) the environment, disease control, cancer, heart diseases, and consumer health. The format provides the teacher with health concepts which are appropriate for students in high school. Suggested instructional objectives, teaching strategies, and classroom activities are included as well as media resources. (JD)

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Revised Guidelines for Comprehensive Health Education Grades 10-12

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Preface

The Comprehensive Health Education Act (79-1270) adopted by the Nebraska State Legislature in 1971 requires that:

1 instruction in comprehensive health education shall take place in all schools;
2 the Commissioner of Education shall prepare and distribute, upon request, teaching aids and materials for effective courses in comprehensive health education; and
3 schools failing to meet the provisions of the act will be guilty of a deviation from the approval and accreditation rules and regulations.

Acting upon the directive of this legislation, the Department of Education with the assistance of an advisory committee developed *Guidelines for Comprehensive Health Education: A Conceptual Approach,* and made this publication available to schools in 1972. Those guidelines suggested that a truly comprehensive program should include 17 major topics of instructions. Concepts and teaching activities were suggested for each instructional topic.

Local school systems were urged to use the guidelines as a foundation or "working tool," to be of assistance as schools designed instructional programs which met the specific needs and interests of their pupils while being consistent with the educational philosophies of their local communities. Decisions about program content, selection of instructional materials and teaching methodology were and are the responsibility of each school system.

Since the passage of the Comprehensive Health Education Act and the subsequent development of health curriculum guidelines, the Department of Education has received numerous requests from school administrators and teachers for assistance in two common areas:

1 the development of observable and/or measurable instructional objectives; and
2 the identification of suitable supportive instructional materials.

It is because of these continued requests that the Department of Education has undertaken revision of the comprehensive health education curriculum guidelines. This publication (for grades 10-12) is the last of five such guidelines which span grades K to 12.

A majority of the concepts suggested in the original health guidelines are included in this revision edition. The concepts have been reorganized, however, into seven or fewer major topic areas rather than the original 17 areas. Learning objectives have been designed to assist teachers in determining if their students have attained the concepts. Supportive media which can assist in the learning process have been identified for each concept.

According to the desires of the local school system, instructional television can play a major supporting role in utilization of these guidelines. Existing and newly-developed ITV health education telelessons will be broadcast on a schedule which matches the scope and sequence of the health concepts and learning objectives found in these guidelines. This coordinated combination of print and other media resources is the most comprehensive curriculum project ever undertaken by the Department of Education.

These curriculum guidelines are suggestions. How the guidelines are used is a decision of each local school district. Each school district decides the specific content to be included in its instructional program, and at which grade levels that content is to be taught.

M. Anne Campbell
Commissioner of Education

Introduction

Health Education — A Statement of Philosophy

Traditionally, man has been concerned with the interaction between his body and his environment, and the premise has been that physical health is an end in itself. An understanding of man's biologic problems, the means to physical health, the nature of diseases and the signs and symptoms suggesting ill health are vital to everyone. Howver, physical health is in itself only a means to an end. Man should not be concerned only with the shell which separates him from his environment, but with his total being.

The concept of total health implies an understanding of a sound body and the appreciation of one's potential and individual worth. It permits expression of an individual's creativity and enhances the dignity and satisfaction that comes through individual ability to give of oneself. Man cannot assume the state of total health alone, for everyone functions with others and within his or her environment.

Approaches to total health education must employ parallel programs, on the one hand aimed at children, their families and their environment, and on the other hand striving to develop new understandings on the part of teachers and school administrators. The successful realization of education for health results from the combined efforts of individuals who complement the activities of each other, supplement the information offered and reinforce the attitudes developed in youth by challenging them to think.

An understanding of the social phenomena underlying new knowledge and emerging problems appears to be particularly significant in relation to curriculum development focused on health education. Because this area of study is concerned with the individual — not as a biological organism, an intellectual or emotional being, or a social creature — but rather as a whole person, an entity, all of the related forces basic to curriculum development seem to command equal consideration.

Good health is not accidental. It is a product of nature and culture, and is related to understanding and values. Good health must not only be philosophical; it must be capable of extension into the realities of daily living. Good health and related understanding should not be, and must not remain, the right of a privileged few. It is to this end that the Department of Education, assisted by the Nebraska Comprehensive Health Education Advisory Council, has undertaken preparation of a guide for the sharing of basic concepts and objectives relevant to health education.

Approaches to total health education must employ parallel programs, on the one hand aimed at children, their families and their environment, and on the other hand striving to develop new understandings on the part of teachers and school administrators.

Health Education in Education

Through the years the term "health" has taken on many different meanings. In ancient societies physical well-being and rules for hygiene were stressed. One of our first recorded references to a concept of health was by Deemus Junius Jebenal (50 - 130 A.D.) who wrote about "a sound mind in a sound body." Later, during the 17th and 18th Centuries, John Locke was often quoted: "A sound mind in a sound body is a short but full description of a happy state in this world; he that has these two has litle to wish for."

Somewhat later, around the mid-19th Century, Horace Mann, secretary to the first board of education in the United States in Massachusetts, was instrumental in stressing the importance of physical well-being and emphasizing health education.

However, mental and social well-being were not appreciably emphasized until the mid-20th Century. Through the years broader and more complete meanings of health have evolved. Today our society is concerned not only with curing or treating sickness or preventing disease, but is also concerned with raising the level of individual health and well-being.

Health is now considered to be a dynamic quality of life rather than a static entity. It is the result of the interaction of many factors and conditions. Hoyman emphasizes this when he refers to health as: ". . . a moving target . . . a dynamic ecologic result involving the interaction of many factors and conditions . . . "[3]

Health is a combination of physical, mental and social well-being, all dynamically interrelated. The individual functions as a whole, as an integrated individual with each dimension of health influencing the others. So physical illness has an effect on emotional well-being and social relationships. The psychosomatic aspects of health illustrate dynamic interrelationships between various dimensions of health.[4]

Educators have been consistently vocal in their expression of concern for the role of health education in education. One of the earlier and more important statements emanated from the 1918 report by the Commission on the Reorganization of Secondary Education appointed by the National Education Association.[8] The report declared health to be one of the seven cardinal principles of education.

The Educational Policies Commission [6] in **The Purpose of Education in American Democracy** (1938) described desired pupil outcomes in each of four groups of educational objectives: a) self-realization; b) human relationships; c) economic efficiency; and d) civic responsibility. In education for self-realization, the commission stated that the health-educated person:

1 understands the basic facts about health and disease;
2 protects his own health and that of his dependents; and
3 works to improve the health of the community.

More recently, the Educational Policies Commission,[5] in **An Essay on Quality in Public Education,** stated that the elementary curriculum should, among other things, teach the essentials of safety and personal health and promote physical coordination and skill.

In a statement about the objectives of schools prepared by the American Council on Education, the objective of health education was to lead students to improve and maintain their own health and to accept their share of responsibility for protecting the health of others. [1]

Other significant bodies have emphasized the role of health education, including the White House Conference on Education in 1955. [8] In response to this question, "What should our schools accomplish?," the conference report recommended that schools help each pupil to develop physical and mental health and wise use of time, including constructive leisure pursuits.

Health is now considered to be a dynamic quality of life rather than a static entity. It is the result of the interaction of many factors and conditions.

A more recent significant statement about the outcomes of education is included in the report of the National Education Association's, **Project on Instruction.** It states, in part, ". . . the content of health instruction belongs in the school curriculum because such knowledge is necessary, is most efficiently learned in school and no other public agency provides such instruction." [7]

As the preceding statements indicate, health education has been an objective of education for many years. It is a discipline which focuses on and strives for maximum physical, mental and social efficiency for the individual, the family and the community.

Health is a broad area and it is positive in its implications. Multiple factors contribute to achievement of a state of health. The health education curriculum must be built around the biological and social facts and principles which relate to man's existence, survival and adjustment. Health education may be conceived as an applied science which rests on solid scientific and social foundations.

Facts and principles, drawn from such scientific areas as genetics, anatomy, physiology, bacteriology, microbiology and psychology, as they can be applied to human living and human health, are essential. Likewise, facts and principles arising from sociology, social psychology, anthropology, economics and political science, known to be significant in understanding health needs and problems, become equally important in the health education process. As such, health education is a discipline in which the relevant knowledge and ideas from several fields are combined and synthesized.

Health Education — A Definition

Have you ever been asked: What is health education? How does what you teach in health education relate to a child's everyday involvement with self, home, school and community? Are facts as important as attitudes in health education? In other words, have you ever been asked to put into words just exactly what you believe health education really is, or is not, and how it contributes to the total educational program of each child? Perhaps if you have not been asked by someone else, you have asked yourself questions similar to these.

Such questions must be probed until meaningful answers are set forth. While these guidelines are devoted to helping health educators, administrators and other educational personnel involved with health programming approach a better understanding of school health education, its programs, methods and application, the American Medical Association and the National Education Association, through their joint Committee on Health Problems in Education, [2] have succinctly outlined the essential elements in the definition of what health is, what it is not, and how it can relate meaningfully to the school.

Health Education Is:

Education for health for healthful living of the individual, family and community.

An academic field and subject. All of its content and objectives are intellectual and academic in nature. Its content must have meaning and purpose for students now as well as for future students.

A relatively new discipline. The natural (biological), the behavioral and the health sciences provide its foundation.

Facts, principles and concepts pertaining to healthful living. These constitute its body of knowledge.

The body of knowledge identified, organized, synthesized and utilized in appropriate courses and experiences; it is sequentially arranged to form the discipline.

Derived from sociology, psychology, educational psychology and the behavioral sciences — its purpose is to change favorably health behavior (knowledge, attitudes, practices).

A needed approach to bridge the gap between scientific health discoveries and man's application of these discoveries in daily life.

Health Education Is Not:

Hygiene of yesteryears. It is not "blood and bone" hygiene, nor is it physiological hygiene.

Anatomy or physiology or both of these combined. These fields serve as its foundation, but do not contribute the major concepts of its body of knowledge. They are necessary as background to understand health concepts applied to living.

A pure science, but an applied science. It is an applied science concerned with man's understanding of himself in relation to health matters in a changing society.

Physical education. Health education and physical education have similar goals and are closely related, but their activities and the conduct of activites are completely different. Sound physical education programs properly conducted contribute to the health of the individual.

Physical fitness. It contributes to the total fitness of man. It is not synonymous with muscle fitness.

Driver education. Health education is related to driver education through its safety area. Driver education is but one facet of safety.

Contributing to the well-educated individual by providing meaningful health experiences which can change health behavior. (Educational Policies Commission, **The Purpose of Education in an American Democracy,** 1938).

Best achieved by developing the rational powers of people (critical thinking), enabling them to make wise decisions and to solve personal, family and community health problems. (Educational Policies Commission, 1961.)

Based upon and improved through basic and applied research.

Best conducted by professionally prepared health educators from accredited colleges and universities.

An integral part of the curriculum at every level and an essential element in the general education of all students.

The educational component of a school, college or university health program (instructions, services, environments).

A requirement course organized to deal with legal provisions of alcohol, narcotics and fire prevention. These are essential problems that should be incorporated with other basic problems to provide a structured course or program.

A rainy day or incidental instruction. Health education must be carefully planned and incorporated into the curriculum. It must be taught in a wholesome learning environment in which pupil activities can be carried out, particularly through problem-solving situations under the guidance of professionally prepared health educators.

Just grooming practices such as tooth brushing and hair combing. Health education has gone far beyond grooming.

What Does Health Education Mean for Your School?

Through adequate education for health, you can provide students with:

Opportunities to discuss problems of interest to them, to assess the values of others, and to identify with an adult directly interested in the problems of their age group.

The opportunity to use real problems in studying the process of critical thinking.

Interest in the health and safety aspects of their own daily activities.

A sense of responsibility for personal health.

A feeling of responsibility for community health.

A critical attitude toward advertising of health services and products.

An understanding of growth and development.

An opportunity to develop the ability to understand and interpret health information.

The knowledge and skill to understand and utilize reliable health care.

An appreciation for good health.

Pride in developing and maintaining good health.*

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*This discussion of what health is and is not, and of how it can relate meaningfully to your school is reprinted with the permission of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association.

Factors Affecting Classroom Climate

Following are some factors which may influence the students' ability to acquire positive concepts through health education.

A Healthful School Environment

The school should be a laboratory where the individuals have opportunities to explore their own ideas and to develop personal values and understandings. Schools can contribute to the health (and educational achievement) of children and youth by making it possible for them to live healthfully while they are in school.

A Comfortable Social-Emotional Climate and an Alert Interested Teacher

The teacher guides the learning of desirable social attitudes, i.e., cooperation and fair play, as well as activities and interests to help in growth and maturity development. The teacher needs to be aware of individual health needs of students. An important part of developing a healthful school environment is the social-emotional climate which the teacher establishes in the classroom. The climate must render the student free to inquire, to question, to investigate and to discuss with both the teacher and fellow students. Any threat of embarrassment or reproof must be eliminated if the learners are to have the opportunity to develop individually according to their needs.

An Understanding of Goals for Self-Direction

Students must learn to assume responsibility for care and maintenance of their own health. After leaving school, when self-direction is required, the student will need to know how to plan and carry out a program of healthful living. To help achieve this goal, it is imperative that students be given opportunities for analysis, evaluation and application of health information through various experiences. Without such opportunities it becomes increasingly difficult to expect that they will do so after the security of the school environment is behind them, based solely on theoretical examination of information.

Guidance in Meeting Health Problems

The health of children — physical, mental and social — depends upon what they do for themselves more than upon what is done for them. While the home and community remain the major influences in determining the health attitudes of children, it becomes the responsibility of the school to serve as a catalyst by effecting a meaningful merger of all these influences upon the life of the individual.

Meaningful Units Adapted to the Maturity Level of the Children

Programs in health education must be continuous — taught on a regular basis. The content of the program is determined by the needs and interests of the children and by the stage of growth and maturity which they have reached. Readiness is an important factor for learning.

Motivation for Learning

Before learning can be meaningful, a student's interest must be stimulated. The desire to learn is an essential prerequisite for critical thinking and the teacher is challenged to help each individual develop this desire according to his or her interests and needs. The opportunity to make decisions, to accept responsibility for choices and to aid in planning, developing and evaluating projects will increase student interest and motivation.

Opportunity to Use Real Life Situations as a Basis for Interests in Health

Health is more than a subject to be taught. It is a way of life. As such it presents daily opportunity for development of attitudes, concepts and skills that will help students to become healthier, happier individuals. Teachers can have a dynamic impact upon students if they will use these daily interactions to best advantage. To serve as an exemplar to which the learner may look with pride can be one of the teacher's greatest assets. One's actions speak so loudly that what is said can scarcely be heard.

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7 National Education Association. *Schools for the Sixties: A Report of the Project on Instruction.* (New York: McGraw-Hill Book Co., Inc., 1963).

8 The Committee for the White House Conference. *A Report to the President.* (Washington, D.C.: Superintendent of Documents, Government Printing Office, 1956).

9 United States Department of the Interior, Bureau of Education, *Cardinal Principles of Secondary Education,* Bulletin 1918, No. 35, (Washington, D.C.: Superintendent of Documents, Government Printing Office, 1918).

UTILIZATION OF REVISED GUIDELINES

These revised guidelines for comprehensive health education have been designed to offer teachers suggestions which can assist in providing varied learning opportunities for students.

While acquisition of accurate health knowledge is important, of far greater concern is formation of desirable personal and public health attitudes, values and practices. With this concern in mind, instructional objectives have been developed which are stated in measurable and/or observable terms. It is hoped these objectives will assist teachers in determining if their students are developing desirable health attitudes, values and practices.

These revised guidelines contain four major topic areas. These topics and their areas of concentration are:

1 The Body — anatomy, physiology, tissues, systems, heredity, physical activity, nutrition;

2 The Family — structures, function, responsibilities;

3 Decisions — values, stress, chemical substances, dependence;

4 Environment — diseases, disease control, pollution, cancer and heart disease, consumer health.

The format of these guidelines has been designed to provide the teacher with:

1 health concepts which are appropriate for the senior high student;

2 instructional objectives written in measurable and/or observable terms;

3 suggested teaching strategies and classroom activities; and

4 suggested support materials.

Concept	Instructional Objective	Suggested Activities	Media Resources
A short statement which identifies a health concern.	**Two or more statements which will assist the teacher in determining if the student has attained the health concept.**	**Suggested teaching strategies and activities which will assist the student in attaining the instructional objective.**	**Suggested support material which may be used as a teaching activity.**
The human body is desribed by specific anatomical terms.	The student should be able to: 1 Identify anatomical terminology.	1 Through lecture, demonstration, readings and audio-visual aids, describe the basic body planes, directions and movements. (e.g. superior is towards the head; the eyes are superior to the mouth.) 2 Construct a conceptual model of basic body planes. 3 Form a chart describing the position of various structures as anterior, superior, transverse, etc.	1 "About the Human Body" and "Human Body" (entire series), [illegible] from the Nebraska Department of Health.* 2 "Kinesiology," a NETCHE segment. (See Appendix C, p. 135.) 3 Transparency masters in Appendix B (pp. 112 and 113): a) body planes and directions; b) list of directional terms and definitions. *Preview films before using with students.

These guidelines also contain three appendices.

> Appendix A contains ITV telelesson overviews and activities. Appendix B contains illustrations which may be used for making transparencies and reproductions. Appendix C lists Nebraska-based agencies and associations which have free or inexpensive materials available.

It should be stressed that this is only a guide. The ideas presented are intended as suggestions which schools may use as they develop a health program for senior high students. This guide does not make precise recommendations about which concepts or areas should be covered at grades 10 through 12. The State Board of Education and the Department of Education have consistently stated that course content and the selection of instructional materials are concerns of each local school system. Such decisions should be based upon the specific needs and interests of the students as well as the educational philosophy of the local community.

Health education is very broad in scope and draws upon the physical, social and life sciences. Thus a comprehensive health education program is interdisciplinary in nature. Therefore, it is strongly suggested that all teachers within a school system work together to coordinate their efforts to avoid repetition or omission of content.

Innovative teachers will not limit themselves to the suggestions in these guidelines but rather will go beyond to create their own original learning situations.

The Body

This unit includes the areas of anatomy and physiology, human growth and development and nutrition.

The body is truly a marvelous machine. The presentation of these concepts will enable the student to better understand how it works and to become a health-educated individual.

Notice to Teachers and Administrators

This unit could be considered controversial in your community. Please keep in mind that this is a teacher's guide of suggested concepts and activities for senior high students. Concept and activity materials in these guidelines are not intended for student use.

Recognizing that philosophical, religious and ethnic differences exist among Nebraska communities, the Department of Education recommends that these guidelines be examined carefully by the health education teacher and discussed with an administrator. If others in your community have an interest, seek their input and support.

These guidelines (and the guidelines for elementary and junior high) have been mailed to you in loose-leaf form. This was done so that you may modify these materials to fit your school and community needs.

Concept	Instructional Objectives	Suggested Activities	Media Resources
1 The human body is described by specific anatomical terms.	The student should be able to: 1 Identify anatomical terminology.	1 Through lecture, demonstration, readings and audio-visual aids, describe the basic body planes, directions and movements. (e.g. superior is towards the head; the eyes are superior to the mouth.) 2 Construct a conceptual model of basic body planes. 3 Form a chart describing the position of various structures as anterior, superior, transverse, etc.	1 "About the Human Body" and "Human Body" (entire series) films from the Nebraska Department of Health.* 2 "Kinesiology," a NETCHE segment. (See Appendix C., p. 135.) 3 Transparency masters in Appendix B (pp. 109 and 110). a) body planes and directions; b) list of directional terms and definitions. *Preview films before using with students.

Concept	Instructional Objectives	Suggested Activities	Media Resources
2 The fundamental unit of structure and function in an organism is the cell.	The student should be able to: 1 Define and describe the cell and all its parts. 2 Identify parts of a cell: a) Plasma or cell membrane; b) Protoplasm - the living matter of cells; c) Nucleus - the nuclear membrane; d) Nucleoplasm; e) Chromosomes (DNA and protein); f) Cytoplasm (cytoplasmic organettes). 3 Describe different functions which cells perform.	1 Using text, models, media resources and demonstrations identify cell structures. 2 Describe the functions performed by cells: metabolism, circulation, assimilation, respiration, excretion, secretion, locomotion, sensitivity, reproduction. 3 Invite a guest speaker with expertise in cell anatomy and physiology (pathologist, physician, biologist) to talk with students.	1 Transparency master in Appendix B (p. 111): cell structure. 2 "Importance of Genetics in Today's World" and "The Origins of Life," NETCHE segments. (See Appendix C, p. 135).* 3 Histology, by Arthur W. Ham, J. P. Lippincott Co., Sixth Edition. *Preview films before using with students.
Cells are arranged in tissues; tissues of the same type form organs, and associated organs form systems.	4 Define tissues, organs and systems.		
All the systems of the body work together to maintain a constant internal environment (homeostasis).	5 Define homeostasis and describe why it is important to organisms.		

Concept

3 A group of cells similar in origin, structure and function are called tissues.

Epithelial, connective, muscular, nervous and vascular are the five basic types of tissue; differentiation exists within the various types of tissue.

Instructional Objectives

The student should be able to:

1 Define epithelial tissues:
  a) Epithelial tissue covers the body, lines internal organs and forms glands;
  b) Epithelial tissue protects, absorbs and secretes.

2 Define the difference between covering as a function and lining as a function. (Connective tissues hold tissues together, provide support, and store fat and other materials.)

3 Describe the five basic types of tissue and demonstrate knowledge of their specific functions.

4 Describe the importance of cells and tissue specialization to organisms. Describe epithelial and connective tissues functions and value.

Suggested Activities

1 Obtain prepared slides and/or drawings of the five basic tissues (epithelial, connective, muscular, nervous, vascular). Have the students identify the tissues and describe the basic function of each.

2 Present the students with a list of structures (heart, skin) and have them describe the types of tissue composing the structure.

3 Study a model or picture of the skin as an example of how epithelium covers and protects.

4 Examine a slide, model or drawing of an internal organ as an example of how epithelium covers and protects.

5 Obtain prepared microscopic or 35mm slides to show the types of connective tissue.

6 Obtain a specimen of a fresh joint from a butcher shop or slaughter house to show tendons, cartilage and ligaments.

7 Observe dissection of a frog or other small animal in the biology department, demonstrating adipose and other tissues.

Media Resources

1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.*

*Preview films before using with students.

Concept	Instructional Objectives	Suggested Activities	Media Resources
4 The skeletal system is a multi-purpose system which: a) Provides a framework of support; b) Provides protection for internal organs; c) Functions as a storage center for minerals; d) Produces blood cells.	The student should be able to: 1 Describe four functions of the skeletal system. 2 Classify bones into four categories based on shape. 3 Label all the bones of the appendicular and axial skeleton. 4 Differentiate between facial bones and cranial bones. 5 Identify the skeletal division to which a given bone belongs. 6 Describe the composition and structure of a typical long bone. 7 Describe the epiphysial disk or "growth plate" and its importance in growth and development.	1 Use a skeleton and/or a transparency of a skeleton to demonstrate the different types of bones and how they function in protection, support and movement. 2 Obtain a bone from a butcher shop. Examine marrow, peristeum, ligaments, articular cartilage. 3 Obtain a disarticulated skeleton. Lay the bones out and have the students identify them with reference to name, shape and skeletal division. 4 Compare an X-ray of bones from a young child, a teenager and an adult. 5 Have a local physician talk about fractures, growth and repair of bones.	1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.* 2 Transparency master in Appendix B (p.112): skeletal system. *Preview films before using with students.

Concepts	Instructional Objectives	Suggested Activities	Media Resources
5 The body has three types of muscle tissue (skeletal, cardiac, smooth).	The student will be able to: 1 Describe the three types of muscle tissue in the body (skeletal, cardiac, smooth).	1 Have the students observe the dissection of a frog or other small animal. Have them identify muscle, tendons, fat.	1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.*
Muscle tissue is specialized for contraction.	2 Explain the mechanics of a muscle contraction.	2 Visit a medical or dental school and study a human cadaver. Have the students palpate some superficial muscles and feel their movements.	2 Transparency master in Appendix B (p. 113): muscular system. 3 Contact medical or dental schools for possible field trips.
Skeletal or voluntary muscles enable movement.	3 Define the terms which describe skeletal muscle actions.	3 Invite a physical educator, coach or trainer to speak about muscle conditioning and injuries to muscles.	*Preview films before using with students.
	4 Locate and describe the functions of given muscles.	4 Have the students identify major skeletal muscles on charts, slides or transparencies.	
Skeletal and cardiac muscles will enlarge when exercised.	5 Define atrophy and hypertrophy and explain the benefits of muscular exercise.		

Concepts	Instructional Objectives	Suggested Activities	Media Resources
6 The nervous system is divided into two parts; the central nervous system and the peripheral nervous system.	The student should be able to: 1 Describe the functions of afferent and efferent neurons.	1 Study the shape of the vertebral column and note how the spinal cord passes through it. Also note how peripheral nerves exit from the vertebral canal.	1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.*
	2 Describe the basic structure of a typical neuron.	2 Examine a model of a cross section of a spinal cord.	2 Transparency master in Appendix B (p. 114): nervous system. *Preview films before using with students.
	3 Identify the components of the central and peripheral nervous system.	3 Study models of the human brain.	
	4 Differentiate between central and peripheral nervous system.	4 Obtain a fresh animal brain and a preserved brain and study basic structures.	
The nervous system conducts impulses, integrates the body's activities, interprets stimuli and stores information.	5 Describe a reflex arc.	5 Demonstrate the potellar reflex. Describe why it is used by the physician.	
	6 Describe what happens if afferent and/or efferent neurons are damaged.	6 Have students shine a light into one anothers' eyes. Describe what happens and why it happens.	
	7 Describe the major surface structures of the brain.	7 Invite a neurologist to speak on peripheral nerve injuries, brain injuries or diseases of nerves.	
	8 Demonstrate an understanding of the seriousness of interruptions to the spinal cord.	8 Describe what happens when a leg or arm "goes to sleep." Relate how this simulates loss of sensory nerves.	
	9 Demonstrate an understanding of cerebral spinal fluid, its formation and functions.	9 Invite a physical therapist to speak on rehabilitation of patients with nerve injuries.	

Concept

7 Basic components of the circulatory system are blood, blood vessels and the heart.

Instructional Objectives

The student should be able to:

1 Describe the primary function of blood, blood vessels and heart.

2 Identify and describe the functions of erythrocytes, leukocytes, platelets and blood plasma.

3 Identify the difference in structure and function among arteries, veins, arterioles, capillaries and venules.

4 Describe the basic circulation to the head, upper extremity and lower extremity.

5 Describe the pathways of pulmonary circulation.

6 Identify basic structures of the heart (atria, ventricles, valves, vessels, pericardium).

7 Define and describe arteriosclerosis, and atherosclerosis and aneurysm.

8 Explain what basically happens during a heart attack.

9 Explain the importance of good diet and exercise as related to the circulatory system.

10 Explain what blood pressure is, how it is measured, and how it relates to good health.

11 Explain the Rh factor.

Suggested Activities

1 Obtain some microscopic slides of blood smears; have the students identify cells.

2 Invite a medical technologist to speak about various blood testing procedures.

3 Invite a physician to discuss factors involved in open-heart surgery.

4 Have students learn to take blood pressure by practicing on each other.

5 Compare the resting heart rates of physically active individuals with those of non-active individuals. Discuss results.

6 Obtain 35mm slides or use texts to demonstrate arterial degeneration.

7 Obtain a heart model and have the students identify basic structures.

8 Obtain a fresh animal heart from a butcher shop and dissect it. Compare structures with those learned on the heart model.

9 Fill half-gallon plastic milk bottles with colored water to demonstrate how much blood the heart pumps in one minute.

Media Resources

1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.*

2 Transparency masters in Appendix B (pp. 116 and 117): heart and the heart's pumping cycle.

3 "The Wonderful Human Machine," published by the American Medical Association, 535 Dearborn Street, Chicago, Illinois 60610.

*Preview films before using with students.

Concepts

8 The exchange of gases between living cells and the environment is called respiration.

The two types of respiration are internal and external.

A number of common afflictions may interfere with proper functioning of the respiratory system.

Instructional Objectives

The student should be able to:

1 Locate and name the organs of the respiratory system.

2 Describe the changes in intrathoracic pressure during inspiration and expiration.

3 Identify the difference between internal and external respiration.

4 Explain the factors which determine the exchange of gases in external respiration (partial pressure, membrane permeability, membrane surface, area, rate of blood flow, chemical reactions of blood).

5 Describe how hemoglobin unites and disassociates with oxygen and carbon dioxide.

6 Explain how incoming air is warmed, moistened and cleared.

7 Describe the factors which influence respiratory function (CO_2, pH, O_2, exercise).

8 Describe the effects of smoking on respiration and be familiar with statistics on smoking and lung cancer.

9 Define "eupnea," "duppnea," "hyperpnea" and "apnea."

10 Describe the following clinical considerations: a) anoxia; b) hypoxia; c) asthma; d) Cheyne-Stokes breathing; e) emphysema; f) pneumonia; g) tuberculosis; h) pneumothorax.

11 Describe the beneficial effects of exercise on the respiratory system.

Suggested Activities

1 Study models, slides and charts of the respiratory organs.

2 Invite a physician to speak on smoking hazards and describe common lung diseases and how they are treated.

3 Obtain a spirometer and calculate each student's vital capacity. Then explain total volume, residual volume, total lung capacity.

4 Have a local cardio-pulmonary resuscitation (CPR) instructor demonstrate and speak about the importance of CPR training.

5 Have the class become certified in CPR as a class project.

6 Have the physical educator or coach speak on the beneficial effects of exercise in respiration.

7 Obtain a bell jar apparatus to demonstrate the action of the diaphragm.

Media Resources

1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.*

2 Transparency masters in Appendix B (p. 118): respiratory system.

*Preview films before using with students.

Concept	Instructional Objectives	Suggested Activities	Media Resources
9 The digestive system is composed of numerous organs which as a system convert food into nutrients for the nourishment of cells.	The student should be able to: 1 Locate and name all the digestive organs and the gastrointestinal tract. 2 Describe the function of the organs forming the gastrointestinal tract. 3 Explain the function of saliva, gastric juices, pancreatic enzymes, intestinal enzymes and liver bile. 4 Describe the needs of the body for the three basic foods (protein, carbohydrates, fats). 5 Explain the difference between vitamins and minerals. 6 Explain the function of the different vitamins. 7 Describe factors leading to obesity. 8 Describe basic causes of some digestive problems (obstructions, gastroenteritis, ulcers, gallstones, vomiting, diarrhea, appendicitis, constipation, hepatitis). 9 Describe effects of diet and starvation on body tissues. 10 Define metabolism, catabolism, anabolism. 11 Explain metabolic rate. 12 Explain calories.	1 Study charts and models of digestive organs. 2 Invite a nutritionist or physician to speak on nutrition. 3 Invite a physician to speak on GI problems and ulcers. 4 Have students chart their eating habits for one week and calculate percentage of carbohydrates, fats and proteins in their diets. Calculate daily caloric intake.	1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.* 2 Transparency master in Appendix B (p. 119): digestive system. 3 "The Wonderful Human Machine," published by the American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610. (100 copies at 40¢ each.) *Preview films before using with students.

Concept	Instructional Objectives	Suggested Activities	Media Resources
10 The endocrine system is composed of widely dispersed glands.	The student should be able to: 1 Name and locate the endocrine organs. 2 Explain the differences between exocrine and endocrine glands. 3 Describe the source and effect of pituitary hormones. 4 Describe the relationship between hypothalamus and pituitary. 5 Describe the basic effects of thyroid and parathyroid secretions. 6 Describe the basic effects of the pancreatic hormones. 7 Describe the basic effects of the adrenal medulla and the adrenal cortex. 8 Describe the effect of and interrelation of gonadal hormones and pituitary secretions. 9 Describe basic problems resulting from hyposecretions and hypersecretions of various hormones (e.g. diabetes insipidus and mellitus -- goiter, cretinism, airomegaly).	1 Study gland locations using charts, texts and drawings. 2 Lecture on and discuss basic functions of each endocrine gland, always emphasizing interrelationships. 3 Invite a physician to speak on common endocrine disorders and their treatment. 4 If possible, dissect a laboratory rat and locate the endocrine glands. 5 Show pictures of afflictions caused by endocrine disorders.	1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.* 2 Transparency master in Appendix B (p. 120): endocrine system. *Preview films before using with students.

Concepts	Instructional Objectives	Suggested Activities	Media Resources
11 Perpetuation of the species is a necessity.	The student should be able to: 1 Identify the main function of the reproductive system: to insure perpetuation of the species.	1 Study models, charts and texts of the reproductive system. 2 Invite a doctor to speak on the reproductive processes.	1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.* *Preview films before using with students.
Specific organs exist which are specialized for reproduction in males and females. *Note: Title IX of the Educational Amendments of 1972 provides that boys and girls may be separated for instruction dealing with human sexuality. Check your school's policy regarding this matter.*	2 Describe the essential organs involved in male and female reproduction: testes and ovaries. 3 Describe the difference between sperm and egg. 4 Describe functions of testes, epididymis, vas deferens and ejaculatory duct. 5 Identify the source of fluids which make up semen. 6 Describe the source of hormones that initiate spermatogenesis and testosterone production. 7 Identify the sources of estrogen and progesterone. 8 Describe the layers of the wall of the uterus. 9 Identify the phases of the menstrual cycle. 10 Explain and discuss fertilization and implantation times.		

Concept	Instructional Objectives	Suggested Activities	Media Resource
12 Human growth patterns are influenced by hereditary and environmental factors.	The student should be able to: 1 Define heredity as the sum of all characteristics passed on from one generation to the next. 2 Explain that potential for growth is established by heredity and modified by environment. 3 Identify the following as inherited traits: eye color, freckles, hair and skin color, blood type, body build, height potential, certain mental traits such as memory and general mental ability. 4 Define environment as the surroundings -- both natural and humanmade. 5 Explain how heredity and environment influence physical, mental and social growth developments. 6 Explain that while most people follow the same general pattern of growth and development, there is a wide range of variation within the normal growth pattern.	1 Many characteristics are the result of both heredity and environment. For example, the trait for freckles is inherited. But for freckles to appear, one must be exposed to sunlight. Ask the students to explain other characteristics that are the result of the combined effects of heredity and environment. 2 Assign the students to research the work of Gregor Mendel, Charles Darwin and Sir Francis Galton, who made significant discoveries concerning heredity.	1 "The Genectics Series," films from the University of Nebraska-Lincoln Instructional Media Center.

Concept	Instructional Objectives	Suggested Activities	Media Resources
13 Human growth patterns are influenced by the foods one eats.	The student should be able to: 1 Explain how diet influences physical, mental and social development. 2 Describe how good and poor nutrition can affect one's appearance and self confidence. 3 Discuss the relative importance of various foods in one's diet. 4 Explain how lack of sufficient nutrients can lead to nutritional deficiency diseases. 5 Discuss the importance of nutrition before and during pregnancy to both mother and baby.	1 Have students discuss the following characteristics associated with malnutrition: a) quick fatigue; b) poor posture; c) restlessness and irritability; d) frequent and prolonged infection; e) sleep difficulties f) lack of ambition; g) skin problems; and h) lack of appetite. 2 Have an obstetrician speak to the class regarding the importance of good nutrition before and during pregnancy for both mother and baby. 3 Have students research and report on the relative importance of various foods in one's diet. 4 Have students critically evaluate "The Real Talking, Singing, Action," a movie about nutrition.	1 "The Real Talking, Singing, Action," movie about nutrition, available from the Nebraska Department of Health.

Concept	Instructional Objectives	Suggested Activities	Media Resources
14 Malnutrition interacts with disease and other factors to produce reduced life expectancies and poor health for many people.	The student should be able to: 1 Discuss the effect of good nutrition on life expectancies. 2 Discuss the interaction of nutrition with all other factors related to life expectancies. 3 Identify how health needs may not be regulating caloric intake and activity, but choosing balanced meals and improving food processing. 4 Identify various foods of high nutritional value. 5 Plan a balanced meal for his/her age group and activity level.	1 Have the class list its 10 favorite foods and then identify the food they can do without for one year. Mark a + for each food that is high in nutrients. Put an x after the empty calorie foods. 2 Have the class investigate changes in eating habits during the Twentieth Century. 3 Divide the class into small groups and assign each one of the following topics to present to the class as a whole: a) nutrition and mental retardation; b) causes of malnutrition; c) signs of malnutrition; d) pictures and stories of malnutrition; e) rehabilitation of the malnutritioned.	1 "Your Age and Diet," pamphlet from the American Medical Association, 535 N. Dearborn St., Chicago, Ill. 60610. 2 "Something You Didn't Eat," film, 9 minutes.

Concept	Instructional Objectives	Suggested Activities	Media Resources
15 Diet is influenced by psychological factors.	The student should be able to: 1 Identify physical, mental and social reasons for eating. 2 Explain how one's dieting practice is influenced by friends and family. 3 Explain how one's dietary practice is influenced by advertisements. 4 Recognize the common food practices and fads. 5 Evaluate quackery in nutrition.	1 Have the students identify all the reasons for eating. These would include: a) food is necessary to sustain life; b) it is necessary for good health. 2 Have the students consider ways family and friends influence personal food values. 3 Advertisements have a great effect on personal food values. Have the students select a food product and write an advertisement for it using one of the common advertising appeals. 4 Have the students complete a self test on food beliefs. After students complete the test, discuss the results with them.	1 "Reasons for Eating," ITV lesson. (See Appendix A, p. 95.) 2 Ditto master in Appendix B: self test on food beliefs; all answers are false (p. 121).

Concept

16 Adequate nutrition is essential to total well-being.

Instructional Objectives

The student should be able to:

1 Identify proteins, carbohydrates, vitamins, minerals and fats as necessary nutrients for body growth and maintenance.

2 Explain that the basic four food groups provide these nutrients.

3 Identify each of the food groups and the role each plays in diet.

Suggested Activities

1 Present the following information:

Group	Main Role
Milk Group - milk, cheese, ice cream.	Provides proteins, fats, calcium, vitamin D.
Meat Group - meat, fish, beans, nuts, eggs, foul.	Provides proteins, iron and 3 vitamins.
Fruit and Vegetable Group - all fruits and vegetables.	Provides carbohydrates, proteins, iron and 3 vitamins.
Bread and Cereal Group - breads, cereal and macaroni, other baked goods.	Provides carbohydrates, grain, bulk, sugar, added vitamins (C and D) and iron.

2 Ask the students to locate research on vitamin claims and report their findings to the class.

Media Resources

1 "Cooking: Foods for Health," "A Mark of Quality" and "That the Best Will Be Ours," films from the University of Nebraska-Lincoln Instructional Media Center.

Concept

17 Weight is influenced by caloric intake and expenditures.

Instructional Objectives

The student should be able to:

1 Explain that the balance of energy is a determining factor in weight control.

2 Identify three ways energy is used (basic metabolism, muscular movement, taking in and digesting food).

3 Explain that to maintain body weight there must be a balance between the number of calories eaten and the number of calories used.

Suggested Activities

1 Basal metabolism is the minimum amount of energy needed to carry on the internal work of the body. For boys, basal metabolism equals one calorie an hour for each kilogram of body weight. For girls, it equals .9 calories an hour. An approximation of the basal metabolism for a body which weighs 150 pounds is:

a) Basal metabolism = calories a day x kilograms of body weight.
b) Calories a day = 1 x 24 = 24.
c) Kilograms of body weight (one kilogram = 2.2 lbs.) $\frac{150}{2.2} = 68$
d) Basal metabolism = 24 x 68 = 1,632 calories.

2 One's energy requirement is altered by physical activity. This can also be estimated accordingly:

a) Light activity - standing or walking - increases basal metabolism by 50 per cent.
b) Moderate activity - walking or moderate playground activity - increases basal metabolism by 75 per cent.
c) Heavy activity - active sports or swimming - increases basal metabolism by 100 per cent.
d) Ten per cent must be added for the energy that is expended by eating and digesting of food. One should also be aware that the energy cost of the acivity is continued through the full recovery period until the basal metabolic rate is again achieved. This may be three to five hours, depending upon duration and intensity of the activity.

Media Resources

1 "Reasons for Eating," ITV lesson. (See Appendix A, p. 95.)

2 "You Can Reduce," pamphlet from the National Livestock and Meat Board, 407 S. Dearborn St., Chicago, Ill. 60605.

3 "Facts About Figures," film, 18 minutes.

Concept	Instructional Objectives	Suggested Activities	Media Resources
18 Regular physical activity and rest is essential for physical and mental health.	The student should be able to: 1 Explain that regular physical activity is necessary to achieve optimal health. 2 Explain how the muscular, respiratory and circulatory systems are all affected by regular physical exercise. 3 Identify and explain the need for rest, relaxation and sleep for physical fitness.	1 The following information on regular exercise is from the President's Council on Physical Fitness: physical activity benefits the body by increasing strength, endurance and coordination. It: a) increases joint flexibility; b) corrects postural defects; c) improves general appearance; and d) reduces fatigue. 2 Following a heart attack, medically prescribed physical activity is usually a part of recovery and rehabilitation. Have the students contact local doctors, the heart association and state and local health departments to collect information concerning physical activity for the heart patient. 3 Ask the students to define and explain the roles of rest, relaxation and sleep in their daily lives. 4 Refer to the physical activity section in this unit.	1 Ditto masters in Appendix B (p. 122): Determining the Carotid Pulse and Determining the Radial Pulse. 2 "Seven Paths to Fitness," pamphlet from the American Medical Association, 535 N. Dearborn St., Chicago, Ill. 60610. 3 "Youth Physical Fitness," a 28-minute film available from the President's Council on Physical Fitness, Washington, D.C. 4 "What Makes Millie Run," a 21-minute film available from Brigham Young Media Resources or UNL Instructional Media Center.

Concepts

19 Excess body weight is recognized as a common health problem.

An understanding of weight control involves knowledge of the structure and function of the digestive system.

Many factors must be considered in weight control.

Instructional Objectives

The student should be able to:

1 Identify the three major weight problems:
   a) obesity;
   b) overweight; and
   c) fluctuating weight.

2 Demonstrate knowledge concerning:
   a) ideal body weight;
   b) reliability of height-weight tables;
   c) body types; and
   d) percentage of body fat estimated.

3 Identify the important structures of the digestive system and the related functions.

4 Define the important terms related to digestion:
   a) mastication;
   b) digestion;
   c) deglutition; and
   d) peristalsis.

5 Demonstrate a knowledge of the process and absorption of carbohydrates, fats and protein.

6 Understand the complexity of the problems of weight control.

7 Define, identify and process the various physiological factors in weight control:
   a) fat cell development;
   b) appestat;
   c) fasting;
   d) type of food eaten;
   e) how often one eats; and
   f) regulation of food intake.

8 Explain the relationship between caloric intake and expenditure.

9 Demonstrate the importance of diet as a factor in weight control.

10 Demonstrate the role of exercise in weight control.

Suggested Activities

1 Have the class discuss the issues raised in the film, "The Fat Fighters."

2 Have the class discuss how body weight can increase but have less fat.

3 Lecture on the structure and function of the digestive system as it relates to weight control.

4 Have a physican speak on the complexity of weight control.

5 Have the class research and report on the effect of various physical activities on caloric expenditure.

6 Evaluate the effectiveness of certain recreational activities in maintaining body weight.

Media Resources

1 "The Fat Fighters," a film from the University of Nebraska-Lincoln Instructional Media Center.

2 Transparency masters in Appendix B (pp. 123-127) for:
   a) basal metabolic rate caloric requirements;
   b) number of fat cells related to activity;
   c) fasting and 1,000 calories;
   d) lipostatic regulation of weight; and
   e) definition of terms.

Concept	Instructional Objectives	Suggested Activities	Media Resources
20 Being physically educated is an important part of total education.	The student should be able to: 1 Explain why physical activity and exercise are important. 2 Discuss the rationale for learning physical skills which are applicable for recreational use for a lifetime. 3 Explain the role of physical education within society.	1 Have each student evaluate his/her own attitude toward physical education using the Wear Attitude survey or some similar instrument. (See appendix.) Discuss the test results with the students. Point out that students will not be graded on their test scores. Ask the students the following: a) Did you expect to have a "good" attitude? b) Did you score as expected? Why or why not? c) Of what significance is your attitude toward physical education with reference to your future participation in physical activity? d) Can anything be done to change your attitude? e) When did you establish your basic attitude toward physical activity? 2 Have the physical educator present the physical fitness data from some previous classes. Discuss the implications of these results. 3 View and discuss either of these films: "Be Fit and Live" or "Alive and Feeling Great."	1 "Be Fit and Live," a film from the Nebraska Department of Health. 2 "Alive and Feeling Great," a film from the National Audio Visual Center (NAC), General Service Administration, Washington, D.C. 20409. ($10 rental) 3 Value Inventory by Corbin, Dowell, Lindsey and Tolson -- Concepts in Physical Education, Wm. C. Brown, Dubuque, Iowa, 1970. 4 Ditto master in Appendix B (pp. 128 and 129): Wear Attitude Inventory.

Concept	Instructional Objectives	Suggested Activities	Media Resource
21 Each individual should choose his/her own exercise and physical activities.	The student should be able to: 1 Discuss reasons that selection of activities should be based on individual needs and interests. 2 Identify the steps necessary to make a decision concerning choice of exercise and physical activites.	1 Present the following information: a) The basis for individual differences. b) The five steps in making decisions about choice of exercise and physical activities: 1) assess current fitness status: 2) examine current interests; 3) acquire knowledge and understanding of values of physical activity; 4) determine those activities that best meet individual needs and interests; and 5) acquire skill and knowledge in the activities selected. 2 Ask the physical educator to administer the state physical fitness test and discuss the outcome with the class. 3 View and discuss the film, "Run Dick, Run Jane." 4 Have students discuss their individual interests and apparent needs for physical activities. Have them compare their needs and interests with those of their parents.	1 "Run Dick, Run Jane," a film from the University of Nebraska-Lincoln Instructional Media Center. 2 "What Makes Millie Run," a 21-minute film available from Brigham Young Media Resources or UNL Instructional Media Center.

Concept	Instructional Objectives	Suggested Activities	Media Resources
22 Many Americans have failed to make intelligent decisions concerning physical activity and exercise.	The student should be able to: 1 Identify the reasons for poor decisions concerning physical activity and exercise. 2 Write a full week's activity plan.	1 Present information from current research and literature about reasons for poor decisions concerning physical activity. 2 Present evidence to support the fact that Americans have failed to make intelligent decisions concerning physical activity: a) failure of American children to pass minimum physical fitness test; b) many Americans are classified as overweight or obese; c) increase in degenerative diseases; d) complaints of "low back pain"; and e) increase in spectators over participants.	1 American Alliance for Health, Physical Education and Recreation -- quotes and facts supporting Comprehensive Programs of HPER, Washington, D.C., 1975 (1201 N.W.). 2 "The Framingham Study," *American Journal of Internal Medicine*, 1971.

Concept	Instructional Objectives	Suggested Activities	Media Resources
23 Physical fitness is only one component of total fitness.	The student should be able to: 1 Identify the components of total fitness. 2 Explain the relationship between the various aspects of total fitness.	1 Present the mind-body-spirit ideal. 2 Define social fitness, emotional fitness, intellectual fitness and physical fitness and discuss the interdependence of each of these categories. 3 Have students write their own definitions of physical fintess. 4 Ask students to read their definitions and then attempt to form a definition that the majority of the class can accept. 5 Have the class discuss their definitions of physical fitness as compared to the following definition by H. H. Clark: "Physical fitness is the ability to carry out daily tasks with vigor and alertness, without undue fatigue, and with ample energy to enjoy leisure time pursuits and to meet unforseen emergencies."	1 "Run Dick, Run Jane," a film from the University of Nebraska-Lincoln Instructional Media Center. 2 Ditto master in Appendix B (p. 130): definition of physical fitness by H. H. Clark. 3 "Fit, Fat, Fad," pamphlet from Sun Life Insurance Co. of Canada, P. O. Box 6075, Montreal 3, Canada.

Concept	Instructional Objectives	Suggested Activities	Media Resources
24 Physical fitness consists of many specific components.	The student should be able to: 1 Identify the components of physical fitness. 2 Explain the relationship between the various components of physical fitness.	1 Have the students discuss the various components of physical fitness. Health Related Components: a) muscular strength; b) flexibility; c) cardio-respiratory endurance; and d) muscular endurance. Motor Components: e) agility; f) power; g) speed; h) balance; i) reaction time; and j) coordination. 2 Present the relative values of the components of physical fitness by age groups, in order of importance. 3 Have the class discuss the factors influencing physical fitness: a) heredity; b) environment; and c) behavior.	1 Transparency master in Appendix B (p. 131): Important Components of Physical Fitness by Age Groups. 2 "Physical Fitness," pamphlet from the American Medical Association, 535 N. Dearborn St., Chicago, Ill. 68610.

Concept	Instructional Objectives	Suggested Activities	Media Resources
25 A number of physical fitness components may be considered health related.	The student should be able to: 1 Identify the health-related components of physical fitness. 2 Explain the rationale for identifying these components as health related. 3 Evaluate each component as a function of age. 4 Demonstrate a knowledge of the healthful benefits of physical activity.	1 Present a lecture on the health-related concepts of physical fitness, stressing the long term effects of exercise. Include effects on: a) muscle tissue; b) connective tissue; and c) cardio-respiratory function. 2 Discuss the relative importance of each health-related component as a function of age (see transparency). 3 Discuss the film, "Coronary Counter Attack," a sequel to "Run Dick, Run Jane."	1 Ditto master in Appendix B (pp. 132 and 133): Benefits of Training. 2 Transparency master in Appendix B (p. 134): Health Related Physical Fitness Components. 3 "Coronary Counter Attack," a film from Brigham Young University Media Marketing W-Stad., Provo, Utah 84602 (21 minutes, color).

Concept	Instructional Objectives	Suggested Activities	Media Resources
26 Physical fitness is improved by physical activity.	The student should be able to: 1 Identify the contributions of physical exercise to healthful living. 2 Identify the basic principles of fitness training. 3 Define terms commonly used in conditioning programs. 4 Evaluate work load by taking exercise and resting pulse rates. 5 Write an exercise program using the basic principles of fitness training.	1 Lecture on the contribution of physical exercise to the "Good Life." 2 Have students review and discuss their notes from the films, "Run Dick, Run Jane" and "Coronary Counter Attack." 3 Invite influential people of the community who are active in a physical fitness program and have them give their personal experiences. 4 Lecture on training principles: a) medical examination; b) overload principle; c) progression; d) "train, don't strain"; e) specificity of training; f) frequency; g) aerobic and anaerobic training; h) importance of warm-up; i) use of exercise heart rate as indicator of work load. 5 Provide students with a test for detecting gains and losses in cardiovascular fitness. 6 Allow students to take resting and exercise heart rates on themselves and on another student. 7 Demonstrate how heart rate may be influenced by emotion. 8 Discuss what other factors may affect resting and exercise heart rates.	1 Any one of a number of text books dealing with scientifc basis of physical fitness.

Concept	Instructional Objectives	Suggested Activities	Media Resources
27 Aerobic exercise has many health related aspects.	The student should be able to: 1 Define aerobic exercise. 2 Categorize various physical activities according to their relative value in regard to aerobic fitness. 3 Demonstrate a knowledge of the benefits of aerobic activities by writing an exercise prescription for himself/herself. 4 Demonstrate a knowledge of Cooper's point system used in assessing aerobic fitness and potential contributions of various activities by planning an exercise program for a full week.	1 Present a lecture on: a) aerobic exercise; b) Cooper's point system. 2 Have students learn to take resting and exercise pulse. 3 Get volunteers to represent "well-conditioned" and "poorly conditioned" subjects and compare resting, exercise and recovery heart rates. 4 Have the class discuss the outcome of the above exercise and present the underlying factors involved. 5 Have students form a chart of activities and then rank their activities on the basis of the contribution to aerobic fitness. 6 Review benefits of cardio-respiratory fitness. 7 Discuss the various values of using pulse rate as an indicator of aerobic activities. 8 Demonstrate various methods of taking pulse rate.	1 "Run Dick, Run Jane," a film from the University of Nebraska-Lincoln Instructional Media Center. 2 "Do You Feel Good?", pamphlet from Channing L. Bete, Greenfield, Mass. 01301.

Notice to Teachers and Administrators

This unit could be considered controversial in your community. Please keep in mind that this is a teacher's guide of suggested concepts and activities for senior high students. Concept and activity materials in these guidelines are not intended for student use.

Recognizing that philosophical, religious and ethnic differences exist among Nebraska communities, the Department of Education recommends that these guidelines be examined carefully by the health education teacher and discussed with an administrator. If others in your community have an interest, seek their input and support.

These guidelines (and the guidelines for elementary and junior high) have been mailed to you in loose-leaf form. This was done so that you may modify these materials to fit your school and community needs.

The Family

This unit includes courtship, marriage and family relations.

This is an exciting time for most high school students. Through the usual dating process, they begin to experience true concern, compassion and a commitment to another person. However, it can also be a time of questioning, doubt and some confusion.

This material is presented to help the student consider his/her situation in an objective, honest manner.

Concept	Instructional Objectives	Suggested Activities	Media Resources
1 Various factors influence the success or failure of marriage.	The student should be able to: 1 Identify the following as factors which have a direct influence on the success of marriage: a) expectations b) goals c) values d) maturity e) background f) common interests g) religion 2 Explain the possible advantages of pre-marital counseling.	1 If possible invite several married couples to the classroom to discuss this concept. Invite couples who are newly married, couples married 10 years, couples married 25 years.	1 "Are You Ready for Marriage?" and "How Do I Love Thee?", films from the Nebraska Department of Health. 2 "To Be Married," a film from the University of Nebraska-Lincoln Instructional Media Center. 3 Refer to Appendix C (p. 135) for print materials available from the Nebraska Department of Public Institutions.

Concept	Instructional Objectives	Suggested Activities	Media Resources
2 Society recognizes special ceremonies and laws dealing with many of life's activities.	The student should be able to: 1 Explain that marriage is a very personal and a legal relationship. 2 Identify and explain the purpose and role of laws dealing with marriage, birth, death.	1 Invite resource people into the classroom for additional input and insight to this teaching area. 2 Research and report on origin of marriage, birth and death customs. 3 Discuss how infant mortality affects world health. 4 Examine and discuss various types of legal certificates (marriage, birth, death).	1 "Anatomy of a Teenage Engagement" and "This Charming Couple," films from the Nebraska Department of Health. 2 Refer to Appendix C (p. 135) for materials available from the Nebraska Department of Public Institutions.

Concept	Instructional Objectives	Suggested Activities	Media Resources
3 Family structures are of various types.	The student should be able to: 1 Identify various types of family structures. 2 Identify a non-traditional family structure.	1 Ask the students to define "family." List the functions a family has and list the roles the members play. Emphaaize that families come in many sizes, shapes and forms. 2 Discuss the effect of matriarchy and patriarchy on various cultures in which they are significant. 3 Contrast the American family structure with the structure in a kibbutz and other cultures.	1 "Focus On the Family," periodical from F. C. Brown Center for Family Studies.

Concept	Instructional Objectives	Suggested Activities	Media Resources
4 The family has certain functions and purposes as a social institution in current day society. (Procreation, economic education, transmission of culture.)	The student should be able to: 1 Explain that relationships within a family constantly evolve.	1 Conduct a discussion in which the family is treated as a group, a social entity, a cultural pattern, a legal entity, an economic arrangement, a political fact and a biological process.	1 "Who Cares," a film from the Nebraska Department of Health.
	2 Identify the role he/she plays in the family.	2 Discuss and role play a family and a constructive method of dealing with problems. Acceptable solutions are usually based on the following: a) identifying the problem; b) allowing each family member an opportunity to state his/her feelings and opinions; and c) giving all feelings and opinions fair and equal consideration.	2 "How Do Parents and Teens Relate?" and "Four Families," films from the University of Nebraska-Lincoln Instructional Media Center.
	3 Identify methods of resolving family problems.	3 Discuss the role the family plays in the transmission of cultural heritage (customs, language, values, beliefs). Follow this with a foreign exchange student discussing these items of his/her culture.	3 "A Family Decision," ITV lesson. (See p. 96.)

Concept	Instructional Objectives	Suggested Activities	Media Resources
5 Early childhood education is a family responsibility and parents and other family members play a vital role in the development of children.	The student should be able to: 1 Identify and discuss various family responsibilities.	1 Discuss parental responsibilities of meeting physical, emotional and social needs of children. 2 Have committees develop reports to the class on the principles of care, how homes can supplement school education, and how the physical needs of children are best met. 3 Discuss the stages through which an infant becomes acclimatized to family life.	1 "A Family Decision," ITV lesson. (See p. 96.) 2 "Sexual Values in Society," filmstrips and records available from Guidance Associates. Examines the need for communication and understanding between generations. 3 "What To Tell Your Children About Sex," pamphlet from Child Study Association of America, Meredith, N.Y.

Concept	Instructional Objectives	Suggested Activities	Media Resources
6 The structure of the family can be viewed from population statistics.	The student should be able to: 1 Identify sources to obtain information about family structures. 2 Interpret current family data and identify changes or trends.	1 Have students interview local and/or state members of the Bureau of Statistics to learn of the changes in the percentage of the American population living in families, number of persons per household, number of married couples, number who own homes. 2 Compare trends in marriage rate and size of family. Relate these to national stature, war, peace.	1 "The Population Bomb," pamphlet from Hugh Moore Fund, 51 East 42nd St., New York, N. Y. 10017.

Decisions

This unit includes mental health and the use and misuse of chemical substances.

Good mental health usually includes understanding and liking one's self, understanding and sharing with others and being able to cope with the everyday demands of life. A connection is obvious between one's state of mental health and the decision to use or misuse drugs.

The material in this unit is presented as an effort to help the student become informed, aware of self and able to make critical decisions.

Concept	Instructional Objective	Suggested Activities	Media Resources
1 The sum total of traits and characteristics make each person a unique individual.	The student should be able to: 1 Describe the complexity of human behavior and how personality is a composite of one's total being.	1 Divide the class into committees to explore the influence of heredity, health, environment, religion, interests, education, neighborhood, family, friends, on personality. 2 Assign students to write a paper analyzing their personality strengths and weaknesses. 3 Explore factors making up personality such as: a) physical elements: personal appearance, grooming, biological and physical maturity; b) mental make-up: intelligence -- abstract, concrete, practical; c) emotional patterns; d) social reactions; e) spiritual values.	1 "No Man Is an Island," film from the University of Nebraska-Lincoln Instructional Media Center. 2 "Human Heredity," film from E. C. Brown Trust Co., 220 S.W. Alder St., Portland, Or. 97204

Concept	Instructional Objectives	Suggested Activities	Media Resources
2 Personal values emerge as a result of family influence and other varied experiences.	The student should be able to: 1 Define a value as a personal quality or attribute that is highly prized or esteemed. 2 Identify one's values and how they affect decisions. 3 Differentiate between a factual statement and a value statement.	1 Arrange a panel discussion on how value systems affect behavior patterns, persistence in completing a task, cheating, promiscuous social activities, respect for feelings of others, making the "right decision." 2 Differentiate between a factual judgment and a value judgment and help students define their own values. 3 Define a value judgment as a reaction based on feelings while a factual judgment is based on direct observation and can be proven.	1 Printed material on values available from your Educational Service Unit. 2 "Reflection of Myself," the Adolescent Experience from Guidance Associates.

Concept	Instructional Objectives	Suggested Activities	Media Resources
3 Accepting one's self helps promote mental health. Persons with good mental health respect the many differences they find in people.	The student should be able to: 1 Describe his/her assets and liabilities. 2 Describe how others may see him/her. 3 Describe how he/she makes judgments about people he/she comes in contact with.	1 Study modern values (as owning own home, two cars, business successes). Stress security and productivity rather than accumulation of possessions as possible goals. 2 Discuss prejudice and its effect on the mental health of self and others. 3 Show a film of people living in another culture and discuss how their culture influences their sense of values. 4 Ask each student to write a want ad for a friend. Include all the duties, expectations, assets, qualifications and characteristics of this friend. When completed ask the individual if they would hire that person as a friend. 5 Role play and react to various situations young adults might be confronted with.	1 "Take a Good Look at Yourself," ITV lesson. (See Appendix A, p. 97.) 2 Refer to Appendix C (p. 135) for print materials available from E.S.U.

Concept	Instructional Objectives	Suggested Activities	Media Resources
4 Each individual has sources of stress; some physical illnesses are conditioned by emotional conflicts.	The student should be able to: 1 Identify sources of stress. 2 Explain how individuals react to stress. 3 Demonstrate acceptable methods of dealing with stress. 4 Explain psychological stress and how it produces physiological changes which may lead to chronic disease and disorder.	1 Explain the differences in symptoms of hypochondria and those of a psychosomatic origin. 2 Have a physician speak to the class about ailments with emotional undertones. 3 Read the pamphlet "Stress and Your Health," from Metropolitan Life Insurance Company. 4 Discuss anxiety. How does it interfere with a person's daily performance? Can it work for the good? 5 Identify sources of stress by completing open-ended sentences. For example: a) I am sick and tired of . . . b) I get mad when I see . . . c) I get nervous when . . . 6 Identify ways of dealing with stress such as: a) talking with someone b) physical activity c) some method of relaxation.	1 "Understanding Stresses and Strains," a film from the Nebraska Department of Health. 2 "Stress, What, Why and How," ITV lesson. (See Appendix A, p. 98.) 3 "How To Deal With Your Tension," booklet from the National Institute of Mental Health, 5600 Fishers Lane, Rockville, Maryland 20852.

Concept	Instructional Objectives	Suggested Activities	Media Resources
5 Maturity is the ability to deal with situations of your life in a realistic and effective way appropriate to your age level and a particular situation.	The student should be able to: 1 Relate his/her concepts about maturity. How and when is it acquired? 2 Explain that an individual's decision about interacting with a social force should be based upon information about self, the social force, and its effect upon self and others.	1 Discuss "What is Reality?" 2 Analyze "normalcy," its determinants and its effects. Include discussion of "normal anxiety." 3 Role play various social situations and the decisions one might encounter.	1 "Rules for a Lifetime," ITV lesson. (See Appendix A, p. 99.) 2 "Managing Your Emotions," a film from Coronet Films.

Concept	Instructional Objectives	Suggested Activities	Media Resources
6 Substances assimilated by the body can modify human growth and development.	The student should be able to: 1 Identify numerous assimilated substances (food, plant, chemical synthetics) and list their sources and component parts and possible effects on the body. 2 List the potential benefit or harm to an individual and/or community if local, state and/or federal laws are disobeyed or changed. 3 Discuss local, state, national or international health problems associated with specific assimilated substances. The student should list the roles that individuals at appropriate governmental agencies play in the solutions to these problems and explain the effectiveness of each agency.	1 Discuss whether stock raising and farming practices are beneficial and/or harmful to health (e.g. feeding hormones and antibiotics to livestock to facilitate faster growth; using pesticides and insecticides for larger crops).	1 "Food, Energy and You," a film from Henk Newenhaise or local dairy council. 2 "It Takes A Lot of Help," a film from Kemper Insurance.

Concept	Instructional Objectives	Suggested Activities	Media Resources
7 Chemicals are used and misused for various reasons; to receive maximum benefit from any chemical substance it must be used properly.	The student should be able to: 1 Explain that any drug can be dangerous if improperly used and that nearly all drugs have some side effects and must therefore be taken according to directions. 2 Explain that drugs are used and misused for physical reasons (dieting, sleep, staying awake, controlling pain).	1 Present the following information: A drug is defined as any substance (except food) that alters the normal functioning of the body. This includes soft drinks, tea, coffee, vitamins, anti-perspirants, medicines, alcohol, cigarettes and all illegal drugs. 2 Provide the class with summaries of court cases in which an individual or group has broken laws which pertain to assimilated substances at local, state, or federal level. Evaluate the court cases in terms of: a) Range of punishment; b) Potential harm to community for the crime committed (e.g. property damage, loss of life). 3 Research and analyze the Federal Trade Commission's order to the tobacco industry to warn the consumer of health hazards which are involved in the use of tobacco. 4 Survey local public and private agencies to determine the counter-measures which are being taken to reduce drug-related highway accidents.	1 "Drugs and the Nervous System," a film from the Nebraska Department of Health. 2 "Drugs and Middle America," a film from the University of Nebraska-Lincoln Instructional Media Center. 3 "In the Beginning," ITV lesson. (See Appendix A, p. 100.) 4 "The Bottle and the Throttle," a film from the Nebraska Department of Health.

Concept	Instructional Objectives	Suggested Activities	Media Resources
8 The misuse of chemical substances can cause problems for the individual and society.	The student should be able to: 1 Identify drug misuse as a psychological problem. 2 Identify drug misuse as a social problem. 3 Identify drug misuse as a legal problem requiring law enforcement. 4 Identify drug misuse as a medical problem. 5 Identify drug misuse as a public health problem.	1 Drug misuse creates a very complex problem. Ask the students: a) For whom is it more of a problem—society or the individual directly involved? b) Is it more of a psychological or a medical problem for the drug user? c) What should be the role of law enforcement in the drug problem? 2 Present the following information: In addition to being a psychological, social, legal and medical problem, drug misuse can also be viewed as a public health problem. It can be classified as either a chronic or communicable disease according to these definitions: a) Chronic. Drug misuse is long lasting and often leaves a disability or handicap. b) Communicable. Drug use introduces the habit to others and spreads as a process of social contagion.	1 "Chalk Talk on Alcoholism," a film from the University of Nebraska-Lincoln Instructional Media Center or State Division on Alcoholism. 2 "Drugs - Use or Abuse," a film from the Nebraska Department of Health. 3 "Al's Garage," ITV lesson. (See Appendix A, p. 101.)

Concept	Instructional Objectives	Suggested Activities	Media Resources
9 People who have developed a chemical dependence often need help in overcoming this dependence.	The student should be able to: 1 Define a chemically dependent person as one whose use of chemicals interferes with his/her everyday life. 2 Define and differentiate between a psychological and a physical dependence. 3 Explain that emotional support from friends and family is beneficial in overcoming a chemical dependence.	1 Have each student write a description of a drug dependent person. This should include a physical, mental, emotional, social, and economic description of the drug user. 2 Alcohol is America's number one drug problem. Ask how many of the students described the teenage alcoholic in their paragraphs in the activity above. If no one did, do so now as a class.	1 "Hotline" and "The Legend of Paulie Green," ITV lessons. (See Appendix A, pp. 102 and 103.) 2 "DWI Phoenix," a film from AAA Foundation for Traffic Safety. Emphasizes community approach to driving while intoxicated and correction through education.

Concept	Instructional Objectives	Suggested Activities	Media Resources
10 Several agencies offer treatment and rehabilitation services to help the drug dependent individual.	The student should be able to: 1 Identify agencies and organizations established to help the chemically dependent individual.	1 Have each student either write or personally contact a person or agency which helps drug dependent persons. This can be a doctor, a member of the clergy, a local welfare agency, state or local health department or Alcoholics Anonymous. 2 Realizing that the family of an alcoholic experiences great suffering, organizations have been established specifically to help family members. These include the Al-Anon Family Groups--there is one group for spouses and another for children of alcoholics. Check the local telephone directory or write the Nebraska Division on Alcoholism, Box 94728, Lincoln, NE 68509 for addresses for these groups. Write them for detailed information concerning their work.	1 "The Legend of Paulie Green," ITV lesson. (See Appendix A, p. 103.) 2 "H + 2," concerning two heroin addicts," a film from Stephen Bosustow Productions, explains rehabilitation center and social pressures and responsibilities. 3 "It Takes A Lot of Help," a film from Kemper Insurance Advertising Department. Illustrates several cities' dynamic interdisciplinary approach to local problems.

Concept	Instructional Objectives	Suggested Activities	Media Resources
11 Mental disorders have many causes and are of varying degrees.	The student should be able to: 1 Define psychoneurosis as a behavior disorder caused by emotional tension. 2 Identify some of the common forms of psychoneurosis (hysteria, unreasonable fears, obsessions). 3 Define psychosis as a very serious disorder in which a person has lost touch with reality. a) Organic psychosis is caused by physical or structural change in the brain because of disease or injury. b) Functional psychosis involves a normal-appearing brain that is not able to function. 1) schizophrenia 2) manic-depression	1 Have half the students research neurosis and the other half, psychosis. Choose one student from each group to report the total findings to the class. These two terms are frequently confused and this will help to clarify them. 2 Everyone gets a little depressed sometimes. Ups and downs are a part of life and most people are able to deal with them and accept the lows when they come. However, the psychotic manic-depressive has no control over his/her ups and downs and is often suicidal when down. Have the students research the manic-depressive and report causes of the disorder and the type of personality prone to this mental disorder.	1 "A World Turned Upside Down," ITV lesson. (See Appendix A, p. 104.) 2 "Anger At Work," film. 3 "Feelings of Hostility," film. 4 "Feelings of Rejection," film.

Concept	Instructional Objective	Suggested Activities	Media Resources
12 Various treatments are prescribed for mental illness.	The student should be able to: 1 Identify the following as the major types of treatment for mental illness: a) individual and/or group therapy; b) chemotherapy; and c) electro-shock therapy.	1 Chemotherapy or drug therapy has been an important advance in the treatment of mental illness. Tranquilizers decrease a patient's fears and enable him/her to think clearly, communicate with others and function appropriately. However, many persons feel that in doing so one is only treating the symptom and not the real problem. In fact, by so treating the symptom, perhaps an even larger problem is created. Have the students research both sides of this question and attempt to come to a conclusion. 2 Have the students contact local psychiatrists or hospital personnel and ask their opinions concerning chemotherapy.	1 "Broken Appointment," film. 2 "Chain of Care," film. 3 "Community Mental Health," film. 4 "Delayed Journey," film.

The Environment

This unit includes environmental health, disease control, consumer health and safety.

The environment is defined as everything outside one's self. It is a great, big world including many things which have a very direct effect on us. This material is offered to help students gather correct information, be aware of all the alternatives and make health-wise decisions.

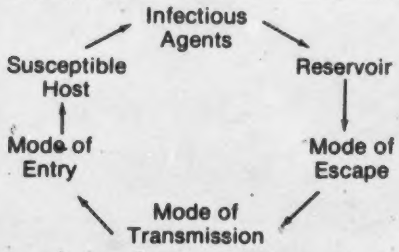
Concept	Instructional Objectives	Suggested Activities	Media Resources
1 An appreciation and understanding of current medical practices is aided by a historical study of disease and disease control.	The student should be able to: 1 Trace the historical development of care, prevention and cure of various diseases. 2 Identify improvements in the study and control of disease.	1 Have groups research the work done from antiquity to the present to discover and cure specific diseases. 2 Have interested students duplicate some of the experiments done by Redi and Pasteur.	1 "Pathology Tests — Look Into Your Future," pamphlet from Public Affairs Pamphlets, 381 Park Avenue South, New York, N.Y. 12601. 2 "Health Resource Statistics," a book from Public Inquiries Branch, Office of Information, U.S. Public Health Service, Department of H.E.W., Washington, D.C. 20201.

Concept	Instructional Objectives	Suggested Activities	Media Resources
2 Diseases may be classified in various terms which characterize their courses.	The student should be able to: 1 Define and demonstrate knowledge of: a) chronic disease; b) acute disease; c) occupational disease; d) functional disease; e) organic disease; f) communicable disease. 2 Categorize specific diseases into the various classifications.	1 Have students determine the factors which make up each of the disease types. 2 Divide the class into committees; have each select one disease or group of diseases (arthritis, venereal disease, neuromuscular, insect-borne disease) and report on history, cause, source, mode of transmission, incubation period, period of communicability, period of involvement, remission care, control, prevention, research.	1 "Health Protection: The Target of the Bureau of Disease Prevention and Environmental Control," booklet from the Nebraska Department of Health. 2 "Diseases," pamphlet from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20401.

Concept	Instructional Objectives	Suggested Activities	Media Resource
3 Because disease is a disequilibrium, it results whenever there is an uncompensated increase in those factors which promote disease or a decrease in those factors which retard disease.	The student should be able to: 1 Explain the concept of dynamic equilibrium. 2 Explain the process involved in the formation of antibodies and antigens.	1 Discuss the antibody-antigen relationship. 2 Review current theories on natural and acquired immunity and resistance.	1 Control of Communicable Disease - 11th Edition. Meridith Publishing Co., New York.

Concept	Instructional Objectives	Suggested Activities	Media Resources
4 Disease control through disease preventing consists of establishing and maintaining a balance of disease promoting/disease retarding factors so that disequilibrium is not established.	The student should be able to: 1 Describe and discuss the facts of identification and acceptance of known prevention and remedial measures which make it possible to control disease.	1 Have small groups investigate, report and present supporting evidence on specific ideas which individuals might use to prevent or control communicable diseases and chronic diseases.	1 Preventive Medicine and Public Health - 9th Edition. Meridith Publishing Co., New York.
	2 Discuss the methods by which individuals disseminate disease.	2 Have students establish the relative effectiveness as a disseminator of disease of each of the following carriers: patient with mild or missed case (ambulatory patients), prodromal patients, convalescents.	

Concept	Instructional Objectives	Suggested Activities	Media Resource
5 It is society's responsibility to protect its population from disease and to educate its members about disease.	The student will be able to: 1 Discuss the responsibility that he/she has in protecting sociey from disease. 2 Identify the various means available for educating the members of society about disease and its control.	1 Have a pediatrician explain the need for immunization, why immunizations are not given to children before three months of age, why booster shots are given. 2 Visit well-baby clinics. Interview the director concerning philosophy and effectiveness. 3 Evaluate community health standards.	1 "Why Health Education?", a booklet from Public Affairs Pamphlets, 381 Park Avenue South, New York, N.Y. 12010.

Concept	Instructional Objectives	Suggested Activities	Media Resources
6 The environment is an important factor in preventing the spread of communicable diseases.	The student should be able to: 1 Define a communicable disease as a disease that is spread from person to person via various modes of transmissions. 2 Explain that disease-causing organisms are spread via air, water, food, vectors (animals and insects) and soil. 3 Explain that interruption of the mode of transmission is often an effective method of disease prevention.	1 Present the infectious disease cycle:  Infectious Agents Reservoir Mode of Escape Mode of Transmission Mode of Entry Susceptible Host a) Infectious Agents. Bacteria, viruses, fungi, protozoa and rickettsiae. b) Reservoir. Where the agents grow and multiply. People serve as a reservoir for many agents. c) Mode of Escape. Excape may take place during coughing, sneezing or breathing or be expelled in waste material. d) Mode of Transmission. Water, milk, food and air often serve as vehicles of transmission. e) Mode of Entry. In people the natural body openings serve as sites of entry for infectional agents. f) Susceptible host. This is the last step in the infectious cycle; if resistance or immunity is adequate the body will be able to ward off the disease invasion. 2 The development of antibiotics has resulted in something unexpected — drug resistant bacteria. These new bacteria strains may mean that diseases once under control will again reach epidemic proportions. Have the students investigate this phenomena and offer an explanation for the occurence.	1 "A Spreading Problem," ITV lesson. (See Appendix A, p. 105.) 2 Environmental Education for Everyone: Bibliography of Curriculum Materials for Environmental Studies — Washington D.C., National Science Teachers Association.

Concept	Instructional Objectives	Suggested Activities	Media Resource
7 Many chronic diseases are caused by environmental factors.	The student should be able to: 1 Identify a chronic illness as a disease or condition which deviates from the normal and has one or more of the following characteristics: a) the condition is permanent; b) leaves disability; c) requires special rehabilitation; and d) requires a long period of care and supervision. 2 Identify chronic diseases which may be caused by an environmental factor.	1 Present the definition of a chronic disease and have the students list examples of such diseases. These would include the following: cancer, heart disease, diabetes, emphysema, asthma and chronic bronchitis. 2 Present the following information which matches chronic diseases with environmental factors known to be causative agents: a) Cigarette smoke -- lung cancer and heart disease; b) Overexposure to the sun -- skin cancer; c) Polluted air -- lung cancer, emphysema, bronchitis, heart disease, asthma; d) Overexposure to radiation -- leukemia; and e) High cholesterol intake -- heart attack.	1 Building Better Health — ABC Health Series, New York: American Book Company.

Concept	Instructional Objectives	Suggested Activities	Media Resources
8 Environmentalists and scientists are actively engaged in research linking population, land areas and various types of pollution to specific diseases.	The student should be able to: 1 Describe and discuss how medical science, industry, public health and conservation personnel are actively involved in pollution and disease related research.	1 Assign readings, concerning medical research done in this area. (Note: Medical science has established a link between air pollution and bronchial asthma, athroschlerosis, morbidity, respiratory disease mortality and cardio-vascular disease mortality.) 2 Show slides comparing healthy alveolar tissue with that of an individual exposed to pollutants. 3 Have a medical scientist discuss current research in this area. 4 Have students research the work of the World Health Organization.	1 Man and His Environment: An Introduction to Using Environmental Study Areas — American Association for Health, P.E. and Recreation, Washington D.C. 20016. 2 A Selected Bibliography, Conservation Education Association, Danville, Ill. 61832, Interstate Printers and Publishers.

Concept	Instructional Objectives	Suggested Activities	Media Resource
9 Change in the environment may produce beneficial or detrimental variations and can also change human behavior.	The student should be able to: 1 Identify human-made changes in the environment which are beneficial. 2 Identify such changes which are detrimental. 3 Explain what is being done to correct environmental hazards. 4 Describe how heredity and all environments -- biological, physical, social and cultural -- help mold the many characteristics and behaviors of an individual.	1 People are unique. Unlike other animals, they are able to change their natural environment to suit their needs. Because of this, people are able to keep cool in hot weather and warm in cold weather, to prevent disease, to predict natural disasters and to travel to all parts of the world. However, along with making life easier, more varied and more comfortable, great environmental problems have been created. Have the students select a human-made item such as the automobile or energy shortage. Require that the students identify its benefits and problems and what's being done to correct the problems created by the item. 2 Have interested students research the incidence of crimes of passion as they relate to atmospheric conditions and geographical locations.	1 "The Ascent of Man" and "Clay - Origin of the Species," films from the University of Nebraska-Lincoln Instructional Media Center.

Concept	Instructional Objectives	Suggested Activities	Media Resources
10 The effects of air and water pollutants on health are both direct and indirect.	The student should be able to: 1 Explain that air pollution has been found to be detrimental to health. 2 List the following as physical complaints reported by people who are affected by air pollution: cough, smarting and tearing of eyes, nasal discharge, sore throat, headache, choking, nausea. 3 Identify diseases that have been linked to the air pollution problem (chronic bronchitis, emphysema, lung cancer, cardiovascular disease).	1 Set up an emergency situation such as a flash flood, blizzard or tornado. Discuss the following: a) how the emergency might affect the health of the community; and b) how to maintain reasonable living conditions under such constraints. 2 Have students research and discuss the direct affects of air pollution on man (specific diseases - bronchitis, lung cancer) and the indirect effects (kills plant life, reduces amount of sunlight that reaches earth, reduces amount of oxygen). 3 Discuss direct and indirect effects of water pollution on man (kills food organisms on which certain societies depend, unavailable to industry). 4 Invite a limnologist to speak on methods used to determine purity of streams, rivers, lakes.	1 "Air Pollution - Take a Deep, Deadly Breath," a film from the Nebraska Department of Health. 2 "Ark," a film from the University of Nebraska-Lincoln Instructional Media Center.

Concept	Instructional Objectives	Suggested Activities	Media Resources
11 Cancer is a serious medical concern.	The student should be able to: 1 Define cancer as an uncontrolled growth of abnormal cells. 2 Define and differentiate between benign and malignant growths. 3 Explain that while the exact cause of cancer is not known certain contributing factors have been identified (air pollution, radiation, sunlight, smoking, chemicals). 4 Identify the usual methods of diagnosis and treatment of cancer.	1 Present the following cancer danger signals that are stressed by the American Cancer Society: a) a sore throat that doesn't heal; b) hoarseness or cough; c) a lump or thickening in the breast or elsewhere; d) indigestion or difficulty in swallowing; e) change in wart or mole; f) change in bowel or bladder habits; and g) unusual bleeding or discharge. 2 Currently medical investigators are trying to identify viruses as a cause of certain types of cancer. For leukemia (cancer of the blood) and Hodgkins's disease (cancer of the lymph nodes), medical scientists do have great hope of discovering viral causes. If these were the causes, there would be a possibility of developing a vaccine against these cancers. Ask the students to research the latest reports on viruses as a cause of cancer.	1 "Cancer," a film from the Nebraska Department of Health. 2 "The Embattled Cell," a film from the American Cancer Society Nebraska Division.

Concept	Instructional Objectives	Suggested Activities	Media Resources
12 Cardiovascular diseases are a serious medical concern.	The student should be able to: 1 Explain that cardiovascular diseases involve impairment of the heart and blood vessels (arteries and veins). 2 Identify examples of cardiovascular disease (congenital heart disease, rheumatic heart disease, coronary heart disease, strokes and hypertension). 3 Identify and explain how personal health habits can contribute to cardiovascular disease.	1 High blood pressure (hypertension) affects a great number of persons (including many teenagers) and is a serious medical concern. Recently, exposure to high noise levels has been identified as a cause for this condition. Ask the students to identify other factors which are directed related to this condition. *Note:* People who carry antibodies to milk and egg white have a much greater than normal chance of suffering a heart attack; it may give doctors a very effective way of identifying those persons who are most susceptible to heart attacks. 2 Ask the students to identify known factors which can contribute to heart attacks. (These include smoking, a diet high in cholesterol, high blood pressure and lack of exercise.)	1 "I Am Joe's Heart," a film from the University of Nebraska-Lincoln Instructional Media Center. 2 "A Heartfelt Concern," ITV lesson. (See Appendix A, p. 106.)

Concept	Instructional Objectives	Suggested Activities	Media Resource
13 Medical science is constantly improving diagnostic techniques and cures for disease.	The student should be able to: 1 Discuss present and past techniques used in the diagnosis and cure of various diseases. 2 Explain the improvement in the use of diagnostic techniques for various diseases: a) Pap test for cervical cancer; b) TB skin test; c) Urine test for diabetes; d) Radioisotope tracers for diagnosis of internal disorders; e) Full and partial body scans.	1 Research and report on the use of new devices in medical science (cardiograph, electroencephalograph), antibiotics, surgical techniques, post operative care. Compare these with medical science at the turn of the century. 2 Discuss "self cure" techniques (diabetes, allergics, epileptics). 3 Present the following recent medical research and discoveries: a) Scientists are working on development of a synthetic blood substitute. Discuss the pros and cons of this scientific endeavor. b) Chemical abnormalities have been found in schizophrenics. A sugar called rhamnose is often found in the urine of schizophrenics while it is virtually non-existant in that of mentally healthy people. Discuss the benefits of this detection.	1 "Medical Specialists," ITV lesson. (See Appendix A, p. 107.)

Concept	Instructional Objectives	Suggested Activities	Media Resources
14 Self diagnosis and self treatment may endanger health; therefore many health problems are best dealt with by appropriate specialists.	The student should be able to: 1 Explain dangers involved in self treatment. 2 Identify the information that is required to be on over-the-counter drugs and packages and relate this to self diagnosis.	1 Present the dangers of self-treatment and diagnosis: a) diagnosis may be incorrect; b) valuable time is wasted; c) money is spent unnecessarily. 2 Present the following information about medical specialists: a) Pediatrician - specializes in child care; b) Dermatologist - specializes in skin, hair and scalp disorders; c) Obstetrician - specializes in the care of women during pregnancy; d) Orthopedist - specializes in bone disorders; e) Surgeon - specializes in performing operations; and f) Psychiatrist - specializes in mental disorders.	1 "Medical Specialists," ITV lesson. (See Appendix A, p. 107.) 2 "What and When to Buy," ITV lesson. (See Appendix A, p. 108.)

Concept

15 Expenses for medical care are an important part of the family's budget.

Instructional Objectives

The student should be able to:

1 Explain that approximately six per cent of the national annual income is spent on health care.

2 Explain that the health care dollar is spent on hospital costs, physicians, dentists, drugs and health insurance.

3 Explain that the greatest amount of the health care dollar is spent on hospital care.

Suggested Activities

1 The health care dollar is spent approximately in the following manner:

Hospitals	31¢
Physicians	28¢
Drugs	17¢
Dentists	10¢
Health Insurance	8¢
Appliances	4¢
Other	2¢

Have the students represent these figures in graph form (bar, circular, any other usual means).

2 Ask the students, "Who is responsible for your health?" Answers might vary from parents to teachers to doctors. Hopefully, someone will say "I am." Discuss this responsibility as it relates to any of the areas covered in these comprehensive guidelines.

Media Resources

1 "The Health Fraud Racket," film.

2 "Let's Use, Not Abuse Health Insurance," leaflet from the American Medical Association, 535 N. Dearborn St., Chicago, Ill. 60610.

3 "A Consumer's Guide to Health Insurance Plans," booklet from Public Affairs Pamphlets, 381 Park Avenue South, New York, N. Y. 12610.

Concept	Instructional Objectives	Suggested Activities	Media Resources
16 Many factors influence the wise selection of health insurance.	The student should be able to: 1 Identify the primary purpose of health insurance — to provide financial protection. 2 Identify the following types of insurance coverage: a) major-medical health coverage; b) hospital insurance; c) surgical-expense insurance; d) medical insurance; and e) Medicare. 3 Explain that a wise insurance buy means selecting a type of insurance to fit one's needs at a minimum cost.	1 Present the following insurance information: a) Major medical insurance is written with the idea that most people can handle small medical expenses up to $500. However, most people cannot meet expenses that reach into the thousands of dollars. Therefore, this insurance contains a deductible clause (usually $50 - $100) and the insurance company pays all or a percentage of the remainder. A limit of $10,000 is often stipulated. b) Hospital insurance provides financial protection for that part of medical care that costs the most -- hospital costs. c) Surgical expense insurance provides financial coverage for the fees charged by a surgeon. d) Medical insurance covers the physician's charges. Most insurance plans contain one or a variation of these types of insurance. Ask each student to bring a copy of his/her health insurance policy to class and identify and evaluate the insurance plan.	1 "The Health Fraud Racket," film. 2 "Let's Use, Not Abuse Health Insurance," a leaflet from the American Medical Association, 535 N. Dearborn St., Chicago, Ill. 60610. 3 "A Consumer's Guide to Health Insurance Plans," a booklet from Public Affairs Pamphlets, 381 Park Ave. S., New York, N.Y. 10016. 4 "Money Management - Your Health and Recreation Dollar," a booklet from Household Finance Corporation, Prudential Plaza, 130 E. Randolph, Chicago, Ill. 60601.

Concept	Instructional Objectives	Suggested Activities	Media Resources
17 Advertising affects purchasing of health products.	The student should be able to: 1 Identify advertising as a factor which influences purchasing of health products. 2 Identify and describe at least five of the recognized advertising appeals.	1 Present the following description of types of advertising appeals: a) Snob Appeal. Presents the idea that if you use a particular product you will become a member of the elite or the privileged few. b) Testimonial Appeal. Presents well-known personalities to extoll the values and benefits of a particular product. c) Rewards Appeal. Uses stamps, prizes, coupons in an attempt to get the consumer to try a product. d) Humor Appeal. Presents funny skits, songs and jingles to make a product more attractive to the consumer. e) Just Plain Folks Appeal. Stresses the natural, plain and unadorned - a return to nature or to the "good ole days." f) Scientific Evidence Appeal. Uses doctors and scientists (or actors in white coats) to profess the medical or scientific virtues of a product. g) Bandwagon Appeal. Presents the idea that everybody's doing it so don't you be left out. Examples of these advertising appeals can be found in magazines and newspapers, billboards, radio and television. Ask the students to identify examples of each of these or create their own ads illustrating the various advertising appeals.	1 "The Buy Line," a film from Instructional Media Center, University of Nebraska-Lincoln. 2 "What and When to Buy," ITV lesson. (See Appendix A, p. 108.)

APPENDIX A

REASONS FOR EATING

Cross reference: Concept 1:15, page 37.
Concept 1:17, page 39.

Objectives

To list three reasons people follow a variety of eating habits.

To write a personal philosophy concerning eating, food consumption and diet.

Summary

Three senior high girls, including one who is overweight, reveal by dramatic portrayal their philosophies of living, including their relationship to eating and exercise. Each character clearly defines opposing points of view and reveals techniques used to conceal what some consider socially unacceptable views toward diet habits. The overweight girl conceals her habits from her friends and rationalizes her hunger "needs." She also has a point-of-view about sports and exercise that contradicts that of her friends. Situations are shown where the opposing points of view conflict. The viewer is left to decide who has the better philosophy of living and of diet.

A FAMILY DECISION

Cross reference: Concept 2:4, page 58.

Objectives

To describe a workable family decision-making process.

To list environmental factors that influence family decisions.

To propose solutions to family conflict situations.

Summary

Tom and Melanie, two high school students, find themselves suddenly faced with a serious decision about marriage when Melanie's family makes plans to relocate in another state. Conflicts develop between Tom and his parents when marriage plans are announced. Tom's parents had college plans for Tom which they feel will be lost with a marriage of two young people who have no means of financial support. Tom visits with his school counselor to get support for his decision. The conflict affects the relationship between Tom and Melanie—both fantasize the problems they might face after marriage. The drama stops after a review of facts pertinent to the decision for the viewer to finish the story.

TAKE A GOOD LOOK AT YOURSELF

Cross reference: Concept 3:3, page 65.

Objectives

To define personality.

To identify distinct personality types.

To discover self through analysis of personal assets and limitations.

Summary

Several faces of Ann are revealed as a skilled leader assists with group analysis. With the help of group members, Ann describes her personal assets and limitations which are basic to her personality. Through a series of characterizations, we see the "many faces of Ann" by identifying the many roles she plays to protect herself from emotional pain.

A group game is played in which participants assume given roles. During conversation the leader asks group members to identify the roles that participants are playing. This game helps with role identification and analysis of inner and outer roles (masks) of people as they relate and communicate to others.

STRESS . . . WHAT, WHY, AND HOW

Cross reference: Concept 3:4, page 66.

Objectives

To define stress in physiological and emotional terms.

To select from case studies those factors that contribute to stress.

To list methods for coping with stress.

Summary

Following observation of case studies conducive to stress, symptoms, responses, effects, and means for coping with stress are explained. Rationalization, denial of reality, displacement, projection and compensation are five defense mechanisms for stress. Positive responses for coping with stress are identified: talking about the situation with a confidant; rest; work; changing your environment through different activities or by moving temporarily; compromise. Coping with stress is a learned reaction; when all else fails, it is wise to see a doctor or counselor.

RULES FOR A LIFE STYLE

Cross reference: Concept 3:5, page 67.

Objectives

To identify guidelines useful for communicating with other people.

To explain the difference between assertion and aggression.

To list the rules for constructive arguing.

Summary

The central concept of this lesson is to center disagreements on their causes and avoid attacking the personal characteristics of the other person when resolving conflict. Listening, control of emotions (anger) and a willingness to compromise are basic to constructive arguing. The lesson ends with the challenge to role play conflict situations to practice constructive arguing using the techniques demonstrated.

IN THE BEGINNING

Cross reference: Concept 3:7, page 69.

Objectives

In order to make responsible decisions about drinking, students demonstrate:

1 knowledge and understanding of why people drink and don't drink.

2 awareness that they have decisions to make about whether to drink responsibly, irresponsibly, or abstain.

3 awareness of the many outside forces which influrence people's drinking behavior, including parents, peers, religious beliefs, and occupational obligations.

4 ability to decide when to compromise, and how, and when to stand firm in the face of pressures from outside forces to drink and abstain.

Summary

Pete and Liza are engaged to be married. However, a problem arises because Pete's family drinks and Liza's does not. Pete's father is in the catering business and prides himself on his fancy weddings and parties. His business partner and friend, Guido Russo, supplies the liquor. The conflict arises when Guido insists on giving champagne as a wedding gift, to be served at the church reception. Liza's family refuses to allow alcohol. Liza and Pete are caught in the middle. For a time it seems there will be no wedding.

Interwoven with this plot is the story of Tina who wants to go to medical school. Tina's mother is persistently working toward educating Tina to be worldly by teaching her how to drink. Tina is caught in the middle between her loyalties to her mother and her own goals for herself. With the help of the Hotline she finally takes a stand against her mother's efforts to teach her to drink.

Pete and Liza resolve their difficulties with help from their friends at the Hotline. They write their own ceremony and have the wedding performed by their minister at the Hotline.

AL'S GARAGE

Cross reference: Concept 3:8, page 70.

Objectives

In order to make responsible decisions about drinking, students demonstrate:

1 knowledge of the effects of drinking on driving ability and traffic accidents.

2 motivation to drink responsibly or abstain when one is planning to drive.

3 ability to make responsible decisions about riding with an intoxicated or impaired driver and about friends who are considering riding with a drunk or impaired driver.

4 knowledge of the potential legal consequences of being arrested for driving while intoxicated (DWI) and of the chances of being caught.

5 knowledge of the nature of peer pressure to behave irresponsibly and of ways to cope with it.

Summary

Al Schmitz is a gregarious, nice guy in his late twenties. He's a kind of genius when it comes to fixing cars, and he loves to share his knowledge with some of the young car "freaks" in the neighborhood.

At Als' Garage we meet R. J. who is having a running battle with his parents about his car. They know that R. J. has been drinking while driving. A collision with some trash cans leads to R. J.'s being "grounded." Seeking a way to restore his folks' confidence in him, R. J. calls the Hotline. They tell him the details of a local program for problem drivers, the ASAP program, and he voluntarily signs up for it.

Meanwhile, Bill and Curtis, two "regulars" at the body shop, have brought their girlfriends, Barb and Candy, to a party. Things get out of hand as some of the kids are drinking heavily. Bill and Curtis are intoxicated. They insist on driving the girls home. Barb is afraid and calls the Hotline for advice. In the middle of the phone call, she gets a ride for herself and Candy with someone who has not been drinking, but Candy is reluctant to accept it. Unable to say "no" to her boyfriend, she leaves the party with Bill and Curtis. They are arrested on their way home for drunk driving.

HOTLINE

Cross reference: Concept 3:9, page 71.

Objectives

In order to make responsible decisions about drinking, students demonstrate:

1 awareness that there is a body of factual information they should use in making decisions about drinking and not drinking.

2 knowledge of alcohol's physical and behavioral effects.

3 understanding of the difficulty some people have admitting that they have a drinking problem and seeking help for it.

4 understanding of the reasons people help or fail to help others who have problems and the types of assistance that can be provided.

Summary

The Hotline kids, Amy, Cliff, Wendy, Sonya, Mike and friends come in after school every day and on weekends to answer the phone. They are making a valiant effort to keep the establishment going--but it's not easy. They have been receiving calls from irate neighbors who want to see it shut down. One man with an obvious drinking problem keeps calling them. He, too, threatens to stop them. To make matters worse, the city licensing inspector is concerned about their frequent lack of adult supervision.

Their advisor, Paulie Green, a college senior, is absent more often than not. He is a well-meaning guy who is struggling to finish school. The infrequent time he is around the Hotline, he acts strangely.

Finally, after numerous warnings, the licensing inspector gives the kids one week to vacate the Hotline premises--Paulie is needed now more than ever. The kids finally decide to call in Ken Hendricks, a young medical researcher who has befriended the kids, to see if he'll help them, and he agrees. Later the Hotline kids go looking for Paulie and find him in a phone booth taking to Mike --for Paulie is the mysterious caller.

THE LEGEND OF PAULIE GREEN

Cross reference: Concept 3:9, page 71.
Concept 3:10, page 72.

Objectives

In order to make responsible decisions about drinking, students demonstrate:

1 understanding of the differences between responsible and problem drinking;

2 understanding of why people abuse alcohol;

3 knowledge of some of the emotional and behavioral changes people may exhibit as and after they become problem drinkers;

4 knowledge of various forms of treatment and rehabilitation for problem drinkers;

5 knowledge of constructive steps people can take to help a friend or relative who is becoming or has become a problem drinker.

Summary

After several months the Hotline kids see Paulie again, who is re-establishing his life without abusive drinking. He now has a job and is attending college as a part-time student. To try to manage his problems, Paulie is receiving out-patient treatment with a psychologist at a psychiatric institute. He hasn't had a drink in five months. With the use of flashbacks we see the events which led up to Paulie's becoming a problem drinker. He risked losing his financial aid from the college unless he worked as an advisor to the Hotline. His grades began slipping. Paulie was overworked and over-extended, yet he was determined to be self-reliant, and in his mind his admission to himself that he had a problem was unthinkable. Therefore, he was totally incapable of confiding in his friend or the kids at the Hotline.

During the film, we see Karen, the daughter of an alcoholic mother. Miserable over her mother's abusive drinking and her father's unwillingness to recognize the problem, Karen calls the Hotline and is told about Alateen, a group for the children of alcoholics. At the end of the film, she calls the Hotline back to indicate she has attended Alateen meetings and things are better.

At the end of the program, neither Karen's nor Paulie's problems are resolved, but for both there is considerable hope.

A WORLD TURNED UPSIDE DOWN

Cross reference: Concept 3:11, page 73.

Objectives

To describe the primary characteristics of neurosis and psychosis.

To list basic causes of neurosis and psychosis.

To describe the symptoms of neurosis and psychosis.

Summary

Dr. P. Clayton Rivers, clinical psychologist at the University of Nebraska-Lincoln, uses case studies to demonstrate neurotic and psychotic behavior. Dr. Rivers explains symptoms and causes of specific neurotic or psychotic behavior after each case study illustration. The main concept cited by Dr. Rivers is the varying abilities of people to cope with problems on a realistic level (normality) as opposed to exhibiting magnified responses to problems (abnormality).

A SPREADING PROBLEM

Cross reference: Concept 4:6, page 82

Objectives

To describe how communicable diseases can spread.

To identify diseases caused by pathogens.

To describe the characteristics of six disease-causing organisms: bacteria, rickettsiae, viruses, protozoa, helminths, fungi.

To describe passive and active immunity.

To list three communicable disease-prevention procedures.

Summary

The lesson begins with a graphic display of sneezing as a means of spreading the common cold. Using drawings, the "disease cycle" is explained, body defenses are illustrated and several disease-prevention procedures are discussed. A film illustrates the major disease-causing organisms. The major concept is that the disease cycle must be broken — preferably by preventive measures rather than cures — if communicable diseases are to be controlled.

A HEARTFELT CONCERN

Cross reference: Concept 4:12, page 88.

Objectives

To identify the factors that promote good cardiovascular health.

To identify common circulatory disorders and possible causes.

Summary

"A Heartfelt Concern" is a straight-forward discussion of the circulatory system, its care and disorders, and causes of cardiovascular failure. The factual discussion uses charts and special film to explain several diseases: atherosclerosis, coronary thrombosis, cerebral thrombosis, hypertension, varicose veins, thrombophlebitis.

MEDICAL SPECIALISTS

Cross reference: Concept 4:13, page 89.
Concept 4:14, page 90.

Objectives

To list five career opportunities in the medical field.

To describe the training and on-the-job skills needed for five career opportunities in the medical field.

Summary

This lesson uses a "you are there" approach to show students actual medical happenings as several specialists in medicine perform their regular duties. Each health care specialist speaks briefly about why he chose his line of work, what training he took to prepare for work, and what job satisfactions he experiences. Medical specialists included are: emergency medical technician, operating room technician, hospital administrator, medical technologist, social worker.

WHAT AND WHEN TO BUY

Cross reference: Concept 4:17, page 93.
Concept 4:14, page 90.

Objectives

To describe the influence of advertising on the purchasing of health care products.

To identify when self medication is preferred over visitation to a doctor.

To identify disease symptoms that require a doctor's care and diagnosis.

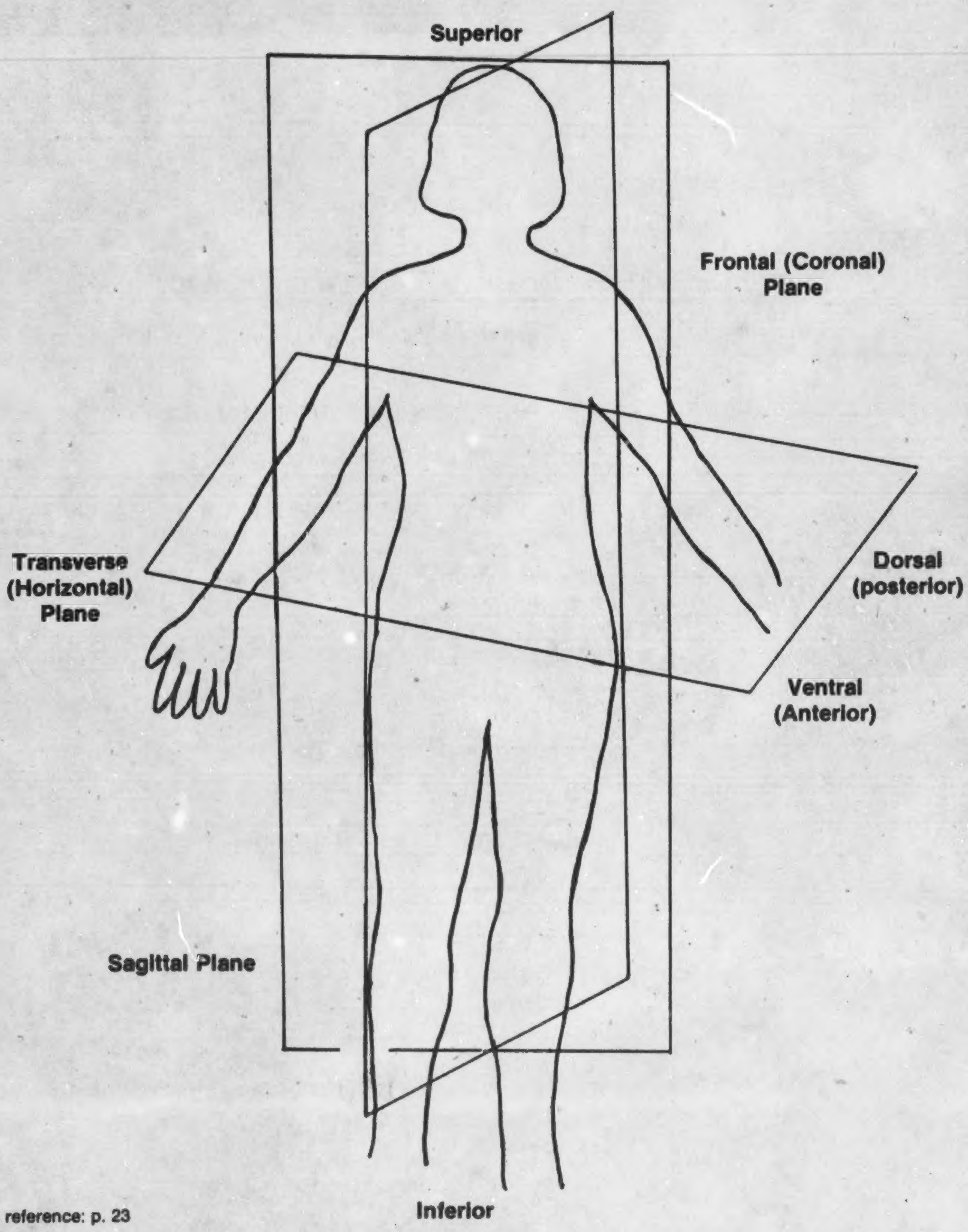
To identify dangers inherent in self medication.

To develop the skill of reading labels of over-the-counter drugs to interpret ingredients, warnings and wise buying purchases.

Summary

Vignettes punctuated by narrative dramatize prevalent attitudes toward the use of over-the-counter drugs. Historically, myth, superstition, religion and lack of knowledge are shown as basic to attitudes toward self medication. The lesson attempts to answer the question: are over-the-counter health products useful? Guidelines for label reading, taking self-prescribed drugs, competitive sales of health products, and disease symptoms warranting a doctor's care are discussed. The usefulness of consumer reports and Food and Drug Administration reports is highlighted.

Body Planes and Directions



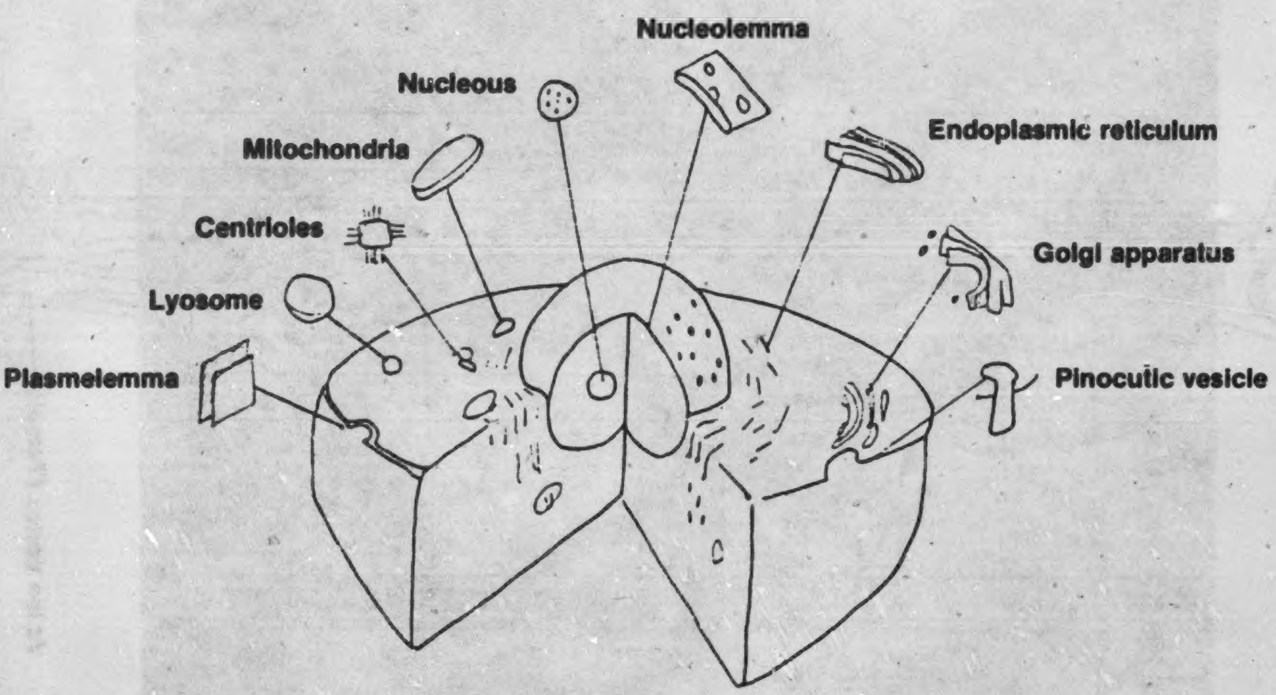
cross reference: p. 23

Directional Terms Describing the Body

LATERAL --	Toward the outside, away from the midline of the body. The ears are lateral to the head.
MEDIAL --	Toward the midline of the body. The inner surfaces of the legs and arms are medial surfaces.
PROXIMAL --	Toward the body trunk, nearest the origin of a structure. The upper arm is the proximal portion of the arm.
DISTAL --	Away from the body trunk. The hand is the distal portion of the arm.
CRANIAL --	Near the head.
CAUDAL --	Near the tail region of the body.

Cross reference: p. 23.

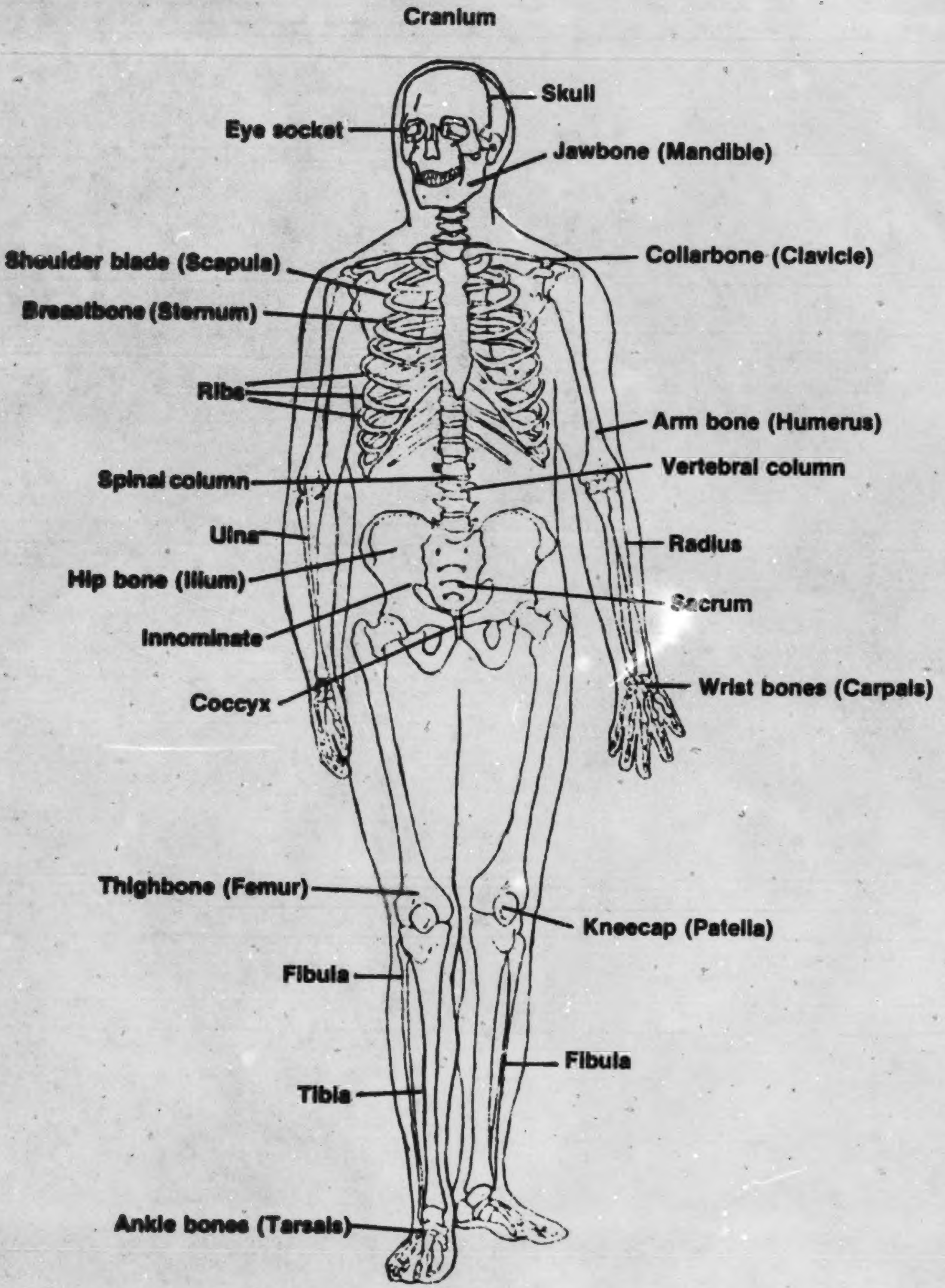
Cell Structure



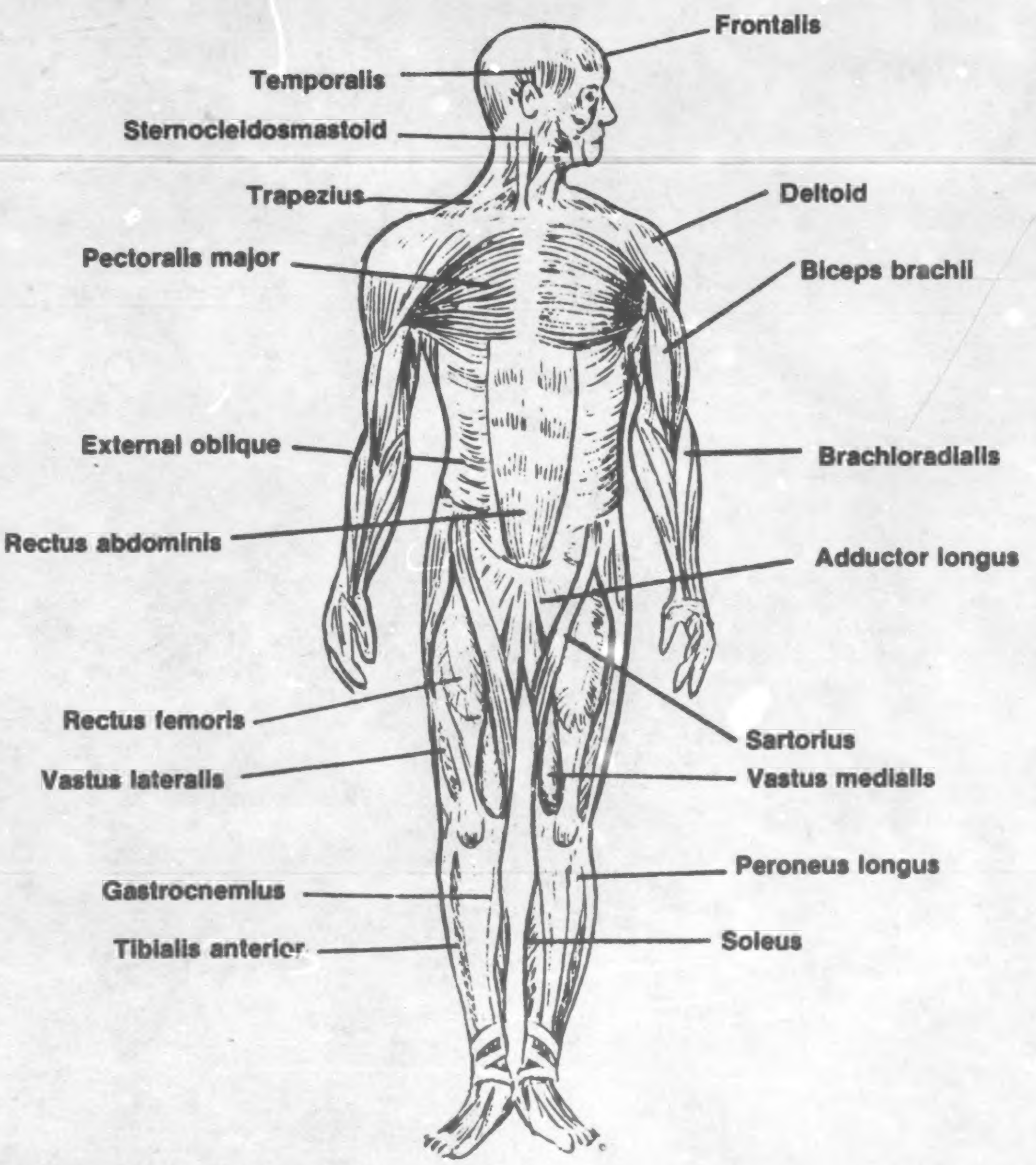
Enlargements of various organelles are shown around the central figure.

cross reference: p. 24

Skeleton

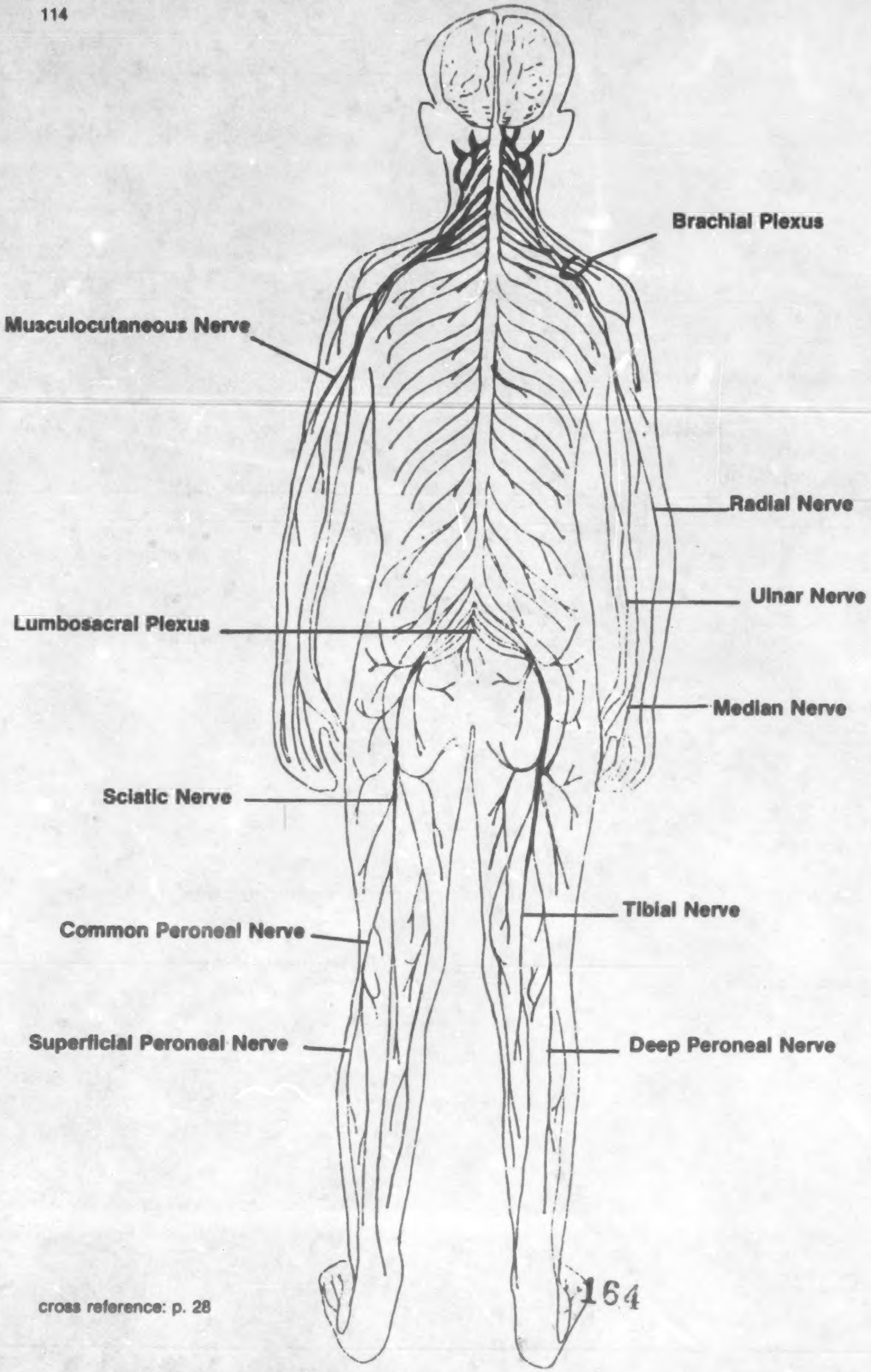

Cranium
Skull
Eye socket
Jawbone (Mandible)
Collarbone (Clavicle)
Shoulder blade (Scapula)
Breastbone (Sternum)
Ribs
Arm bone (Humerus)
Spinal column
Vertebral column
Ulna
Radius
Hip bone (Ilium)
Sacrum
Innominate
Wrist bones (Carpals)
Coccyx
Thighbone (Femur)
Kneecap (Patella)
Fibula
Fibula
Tibia
Ankle bones (Tarsals)

Muscular System



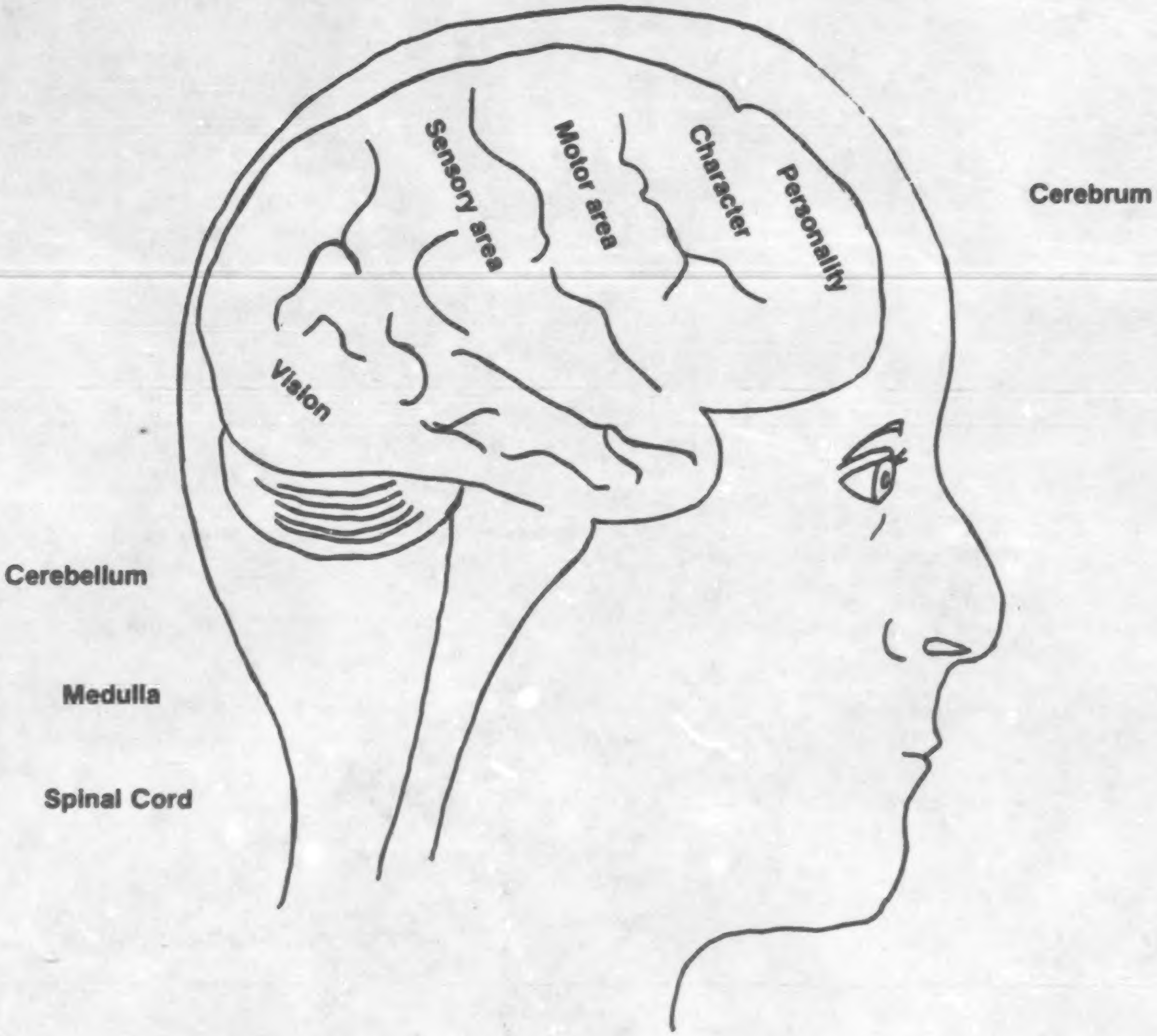
cross reference: p. 27

Nervous System



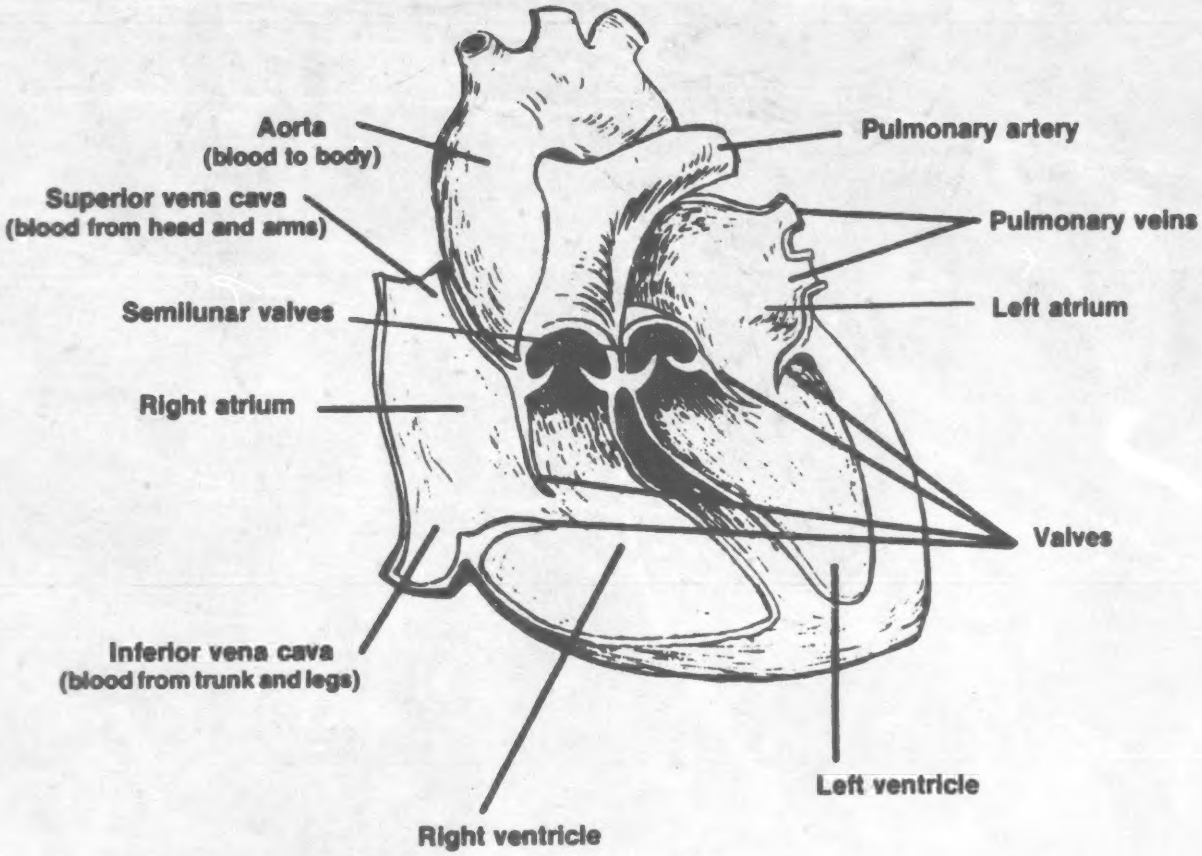
cross reference: p. 28

Primary and Sensory Motor Areas of the Human Brain



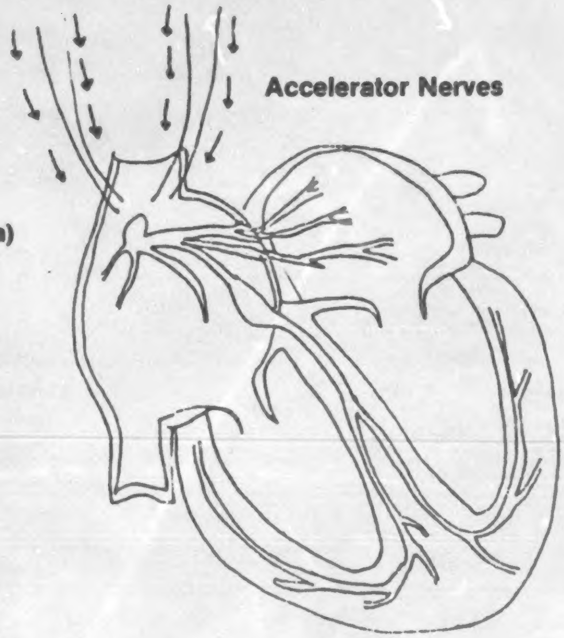
cross reference: p. 28

Heart

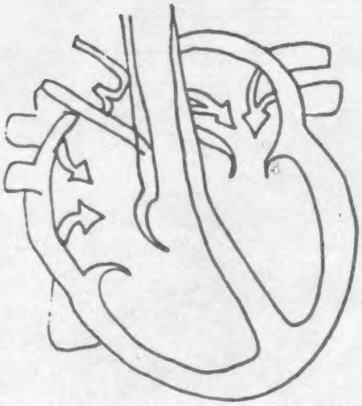


cross reference p. 29

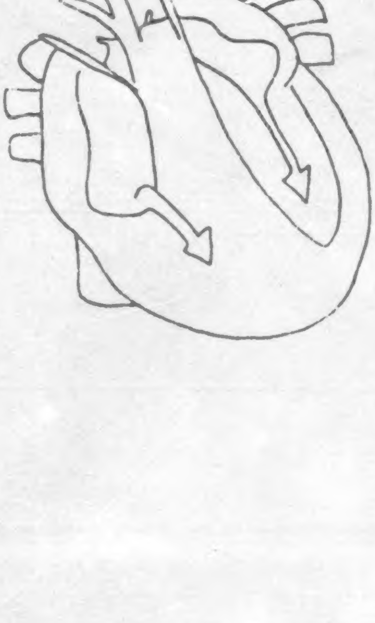
Heart Pumping Cycle



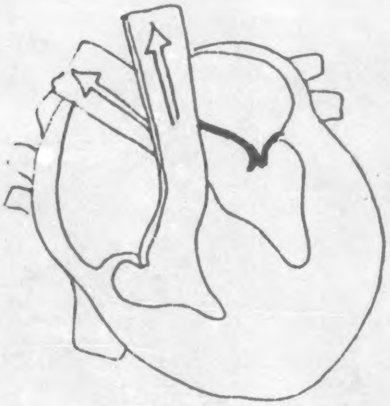
The Heart's Pumping Cycle



1 **Blood fills both atria, some blood flows into ventricles — diastole phase**



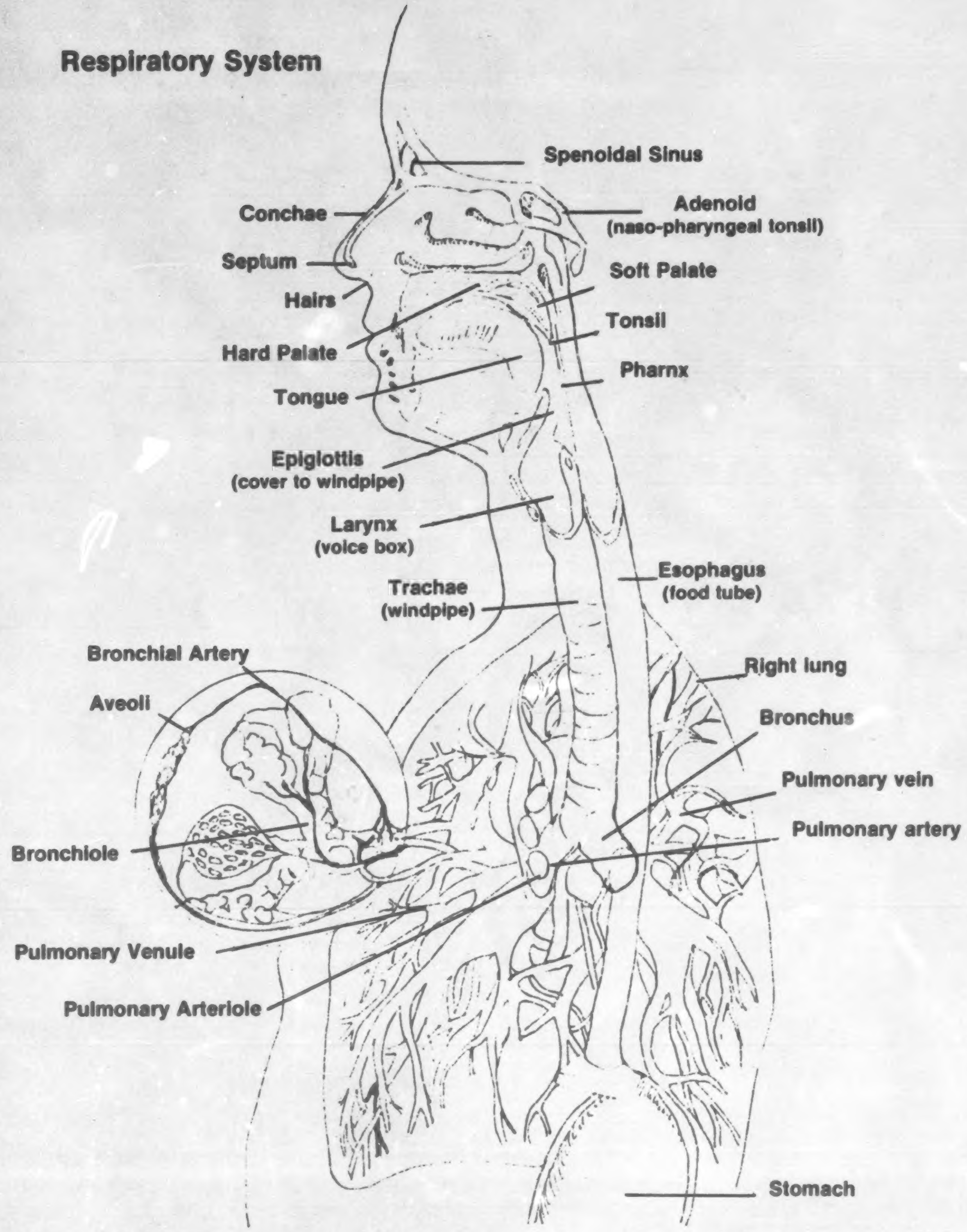
2 **Atria contract, squeezing blood into ventricles**



3 **Ventricles contract, squeezing blood into aorta and pulmonary arteries — systole phase**

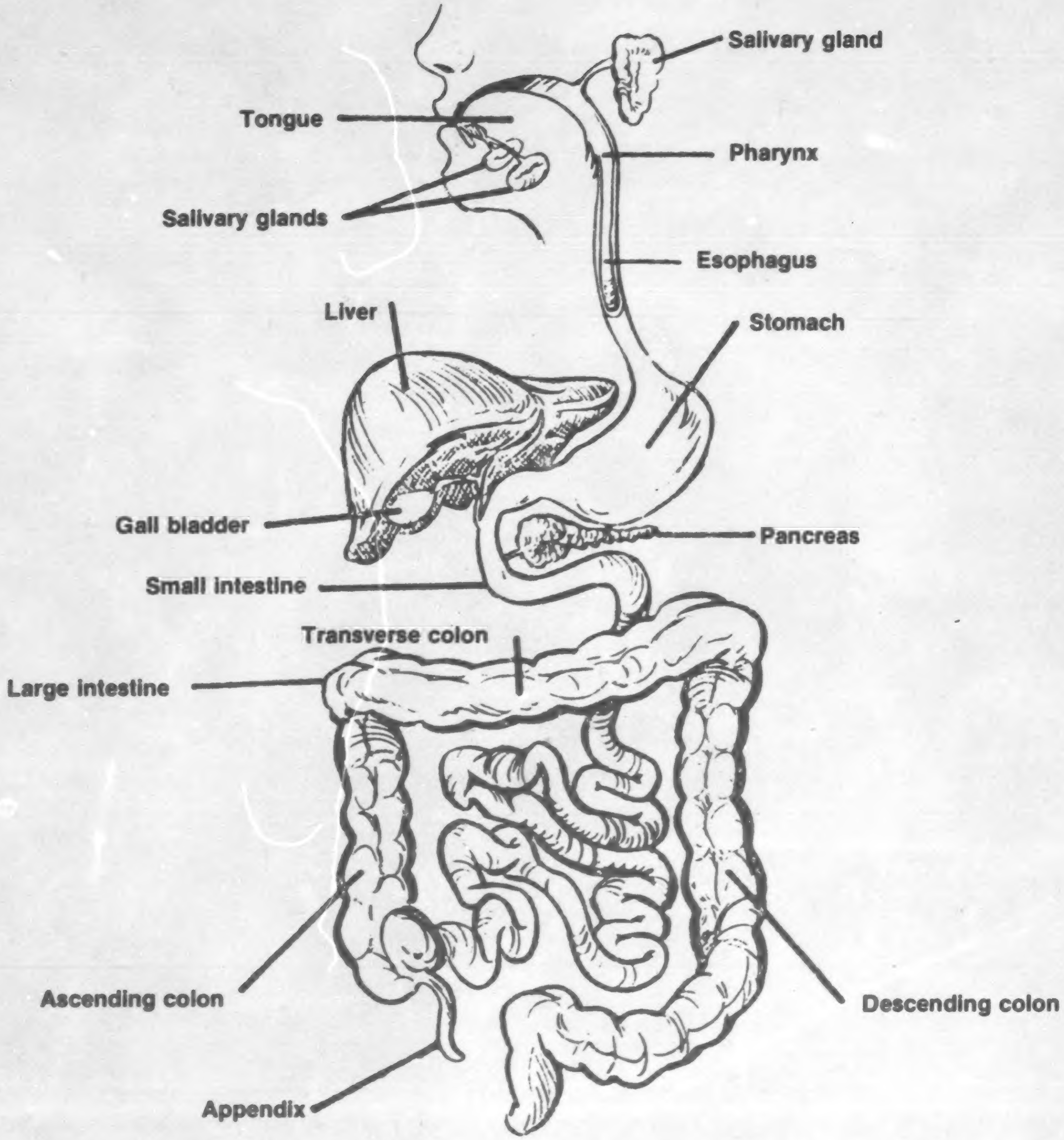
cross reference: p. 29

Respiratory System



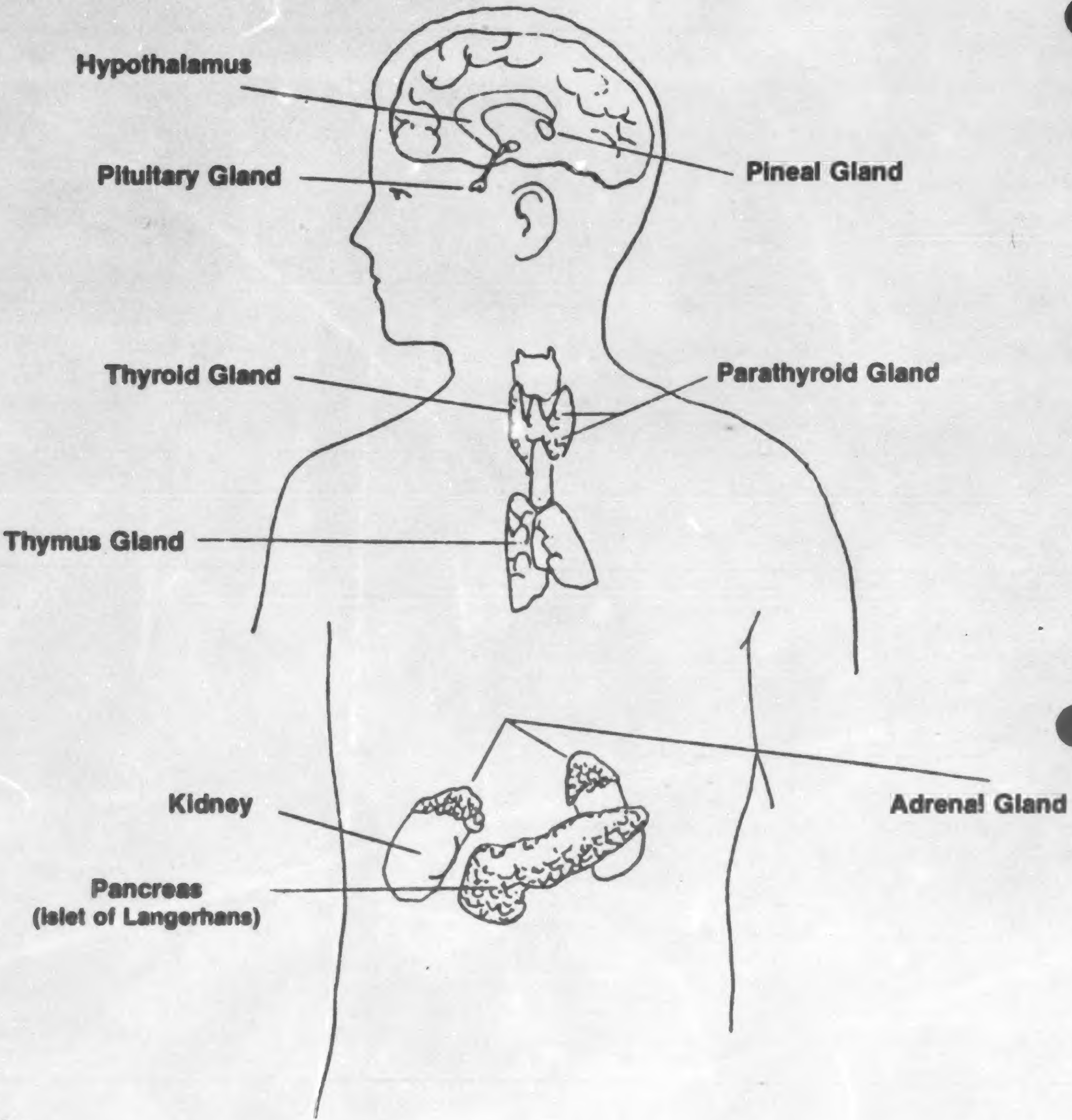
cross reference: p. 30

Digestive System



cross reference: p. 31

Endocrine System



Gonads:
Male - Testes
Female - Ovaries

cross reference: p. 32

Self-Test on Food Beliefs

On a separate piece of paper list the numbers of the following statements which you consider to be false.

1 Raw eggs are more digestible than cooked eggs.
2 One should starve a fever and feed a cold.
3 Prunes and figs cure constipation.
4 A person with "tired blood" needs vitamin pills.
5 Cucumbers are cooling foods.
6 Meats build muscle tissue.
7 Celery is a good nerve tonic.
8 Fish is a brain food.
9 A raw onion taken before going to bed is a good remedy for insomnia.
10 Ripe bananas are indigestible.
11 Toasting bread reduces its caloric content.
12 Milk is the one perfect food.
13 Most diseases are caused by improper diet.
14 Gelatin is a complete protein.
15 Alfalfa is a "wonder food" which deserves more recognition than it has received for its nutritional values.
16 Brown eggs are more nutritious than white.
17 Aluminum cooking utensils contaminate food and may possibly cause cancer.
18 A craving for a certain food is an indication that the body needs that food.
19 As many foods as possible should be eaten raw because cooking destroys nutritive value.
20 Vegetable juices are better than whole vegetables in promoting health.
21 Lobster and ice cream should never be eaten together.
22 Standing for 15 minutes after a meal helps digestion.
23 A diet without meat causes anemia.
24 A good approach to reducing is to eliminate fat from the diet.
25 Drinking water with meals is bad for the digestion.

Cross reference: p. 37

Determining the Carotid Pulse

When taking the carotid pulse, instruct the examiner to use the three middle fingers to palpate the pulse and not the thumb since a clear, steady pulse is present in this digit.

The pulse may be taken on either side of the subject's neck beside the larynx. Using the three middle fingers, apply slight pressure by pressing inwardly and toward the back gradually until the carotid pulse is picked up. It should be pointed out to the examiners (students) and assistants that heavy pressure should be avoided not only because it is uncomfortable for the subject, but because there is a slight chance of erasing or destroying the carotid pulse with unnecessary pressure.

Count the carotid pulse for 15 seconds. When two consecutive counts are within one beat of each other, multiply the last 15-second count by four and record this as the pulse rate per minute. Other adjusted pulse rate determinations may be used in which frequency is counted for a specified number of seconds and is converted to a one minute value, e.g., frequency 20 seconds x 3 or 30 seconds x 2.

Practice may be required before any accuracy can be achieved in counting pulse rate. It is necessary that near total quietness be demanded of the laboratory class and complete concentration on the examiner's part.

Determining the Radial Pulse

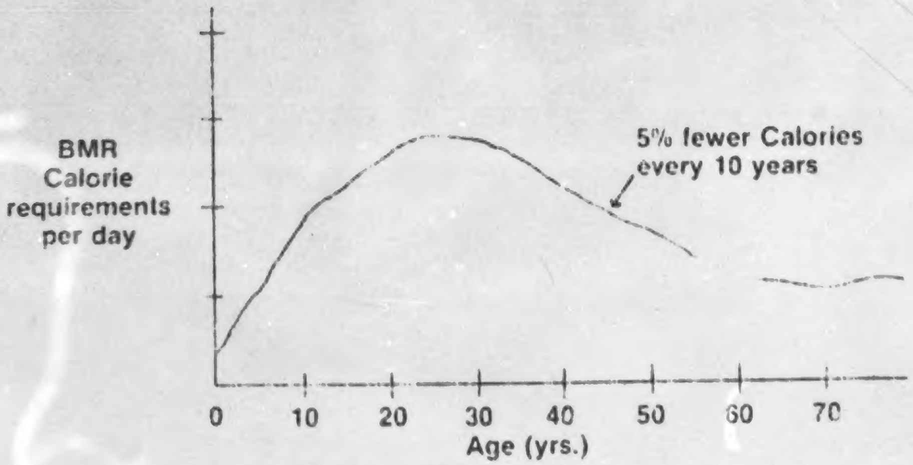
When taking the radial pulse, instruct the examiner to use the three middle fingers to palpate the pulse and not the thumb since a clear, steady pulse is present in this digit.

The pulse may be taken with either arm. Instruct the subject to hold his forearm with the hand palm up. The pulse can be felt over the radial artery that passes over the radius bone at the base of the thumb. The radial artery is found between a large tendon and the bony prominence which is located on the lateral side of the wrist. Point out that too much pressure may blot out the pulse.

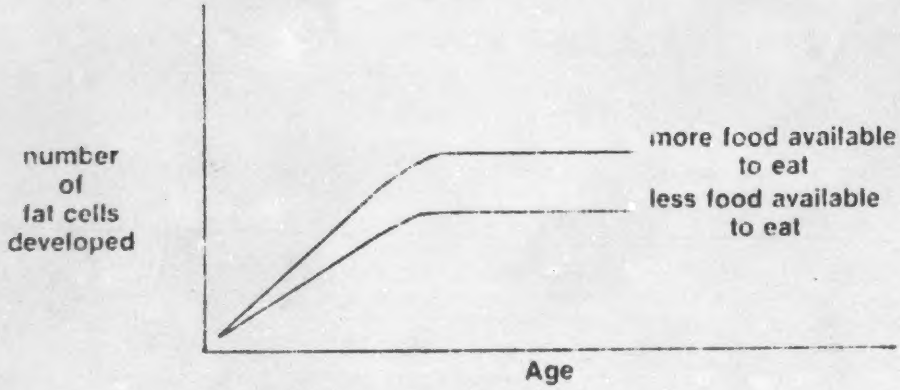
Count the radial pulse for 15 seconds. When two consecutive counts are within one beat of each other, multiply the last 15-second count by four and record this as the pulse rate per minute. Other adjusted pulse rate determinations may be used in which frequency is counted for a specified number of seconds and is converted to a one-minute value, e.g., frequency 20 seconds x 3 or 30 seconds x 2.

Practice may be required before any accuracy can be achieved in counting pulse rate. It is necessary to demand total quietness in the laboratory during this procedure and complete concentration should be demanded from the examiner.

Cross reference: p. 40



BMR as influenced by age

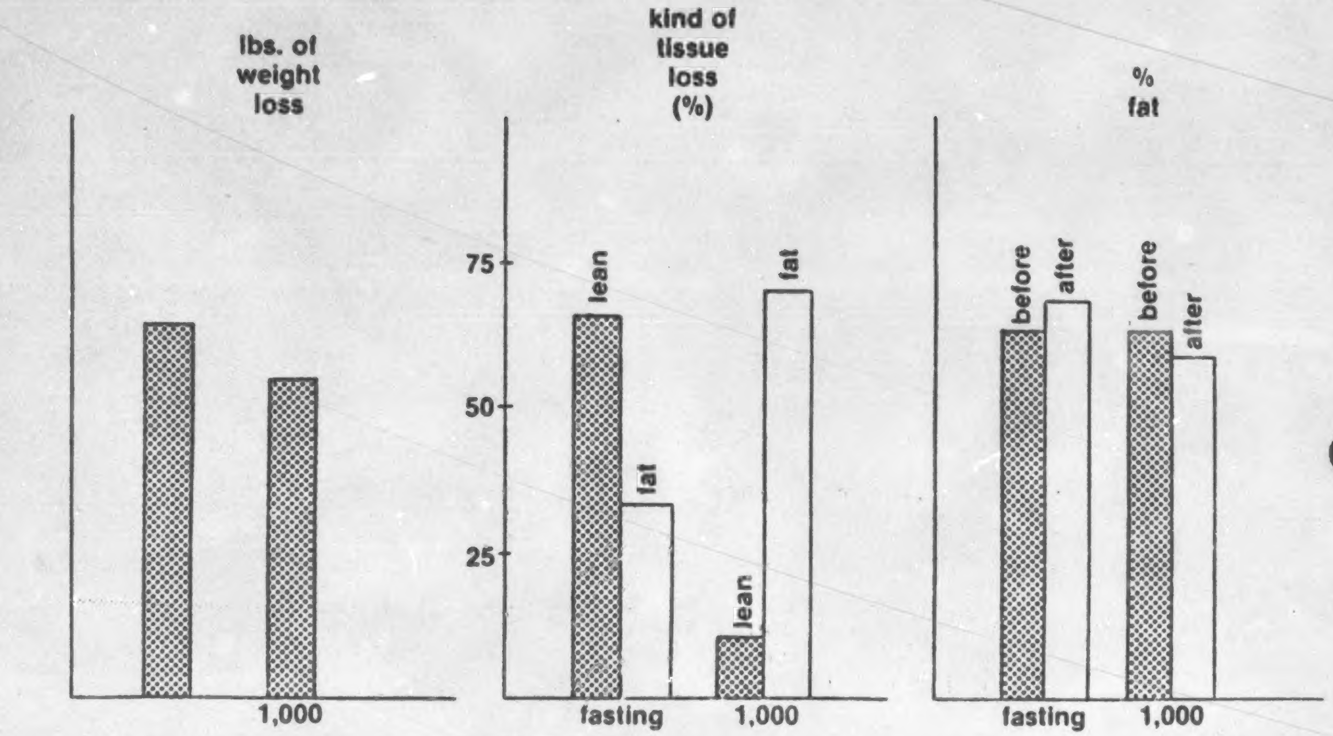


Childhood eating habits and fat cell development.

Comparison of Calorie Values of Various Activities

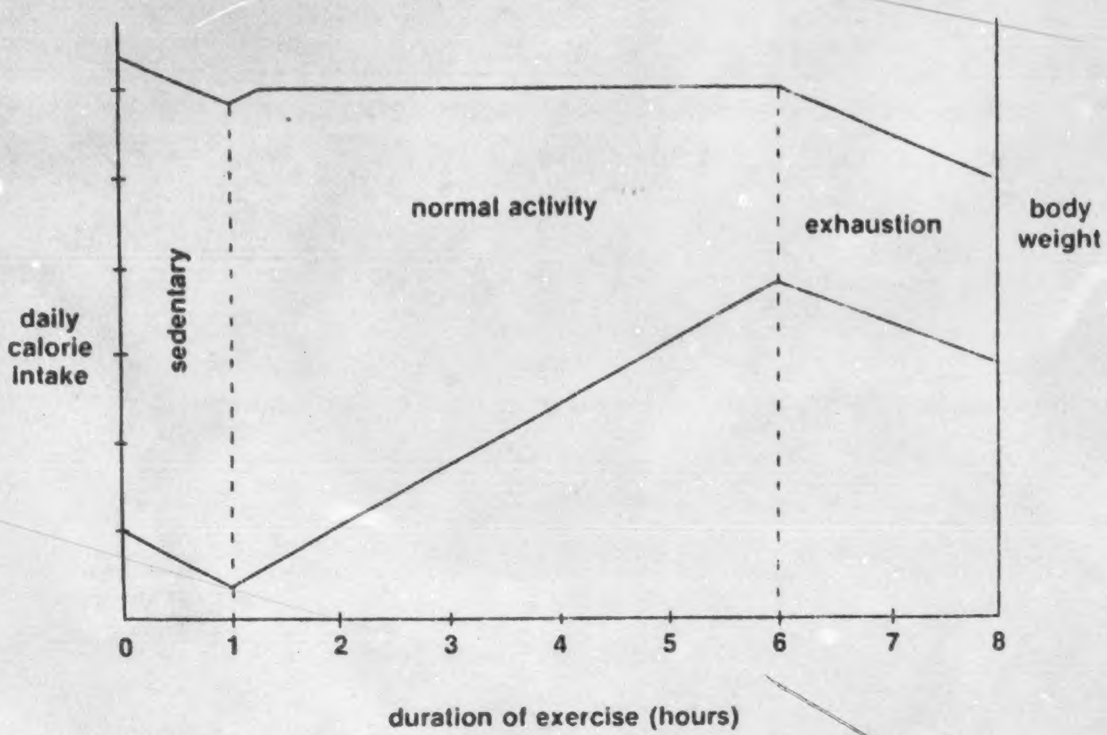
Activity	Calorie Cost/Hour
Golf	223
Archery	168
Bowling	190
Volleyball	210
Calisthenics	330
Cycling	401
Jogging	700
Swimming	530
Walking	[illegible]34

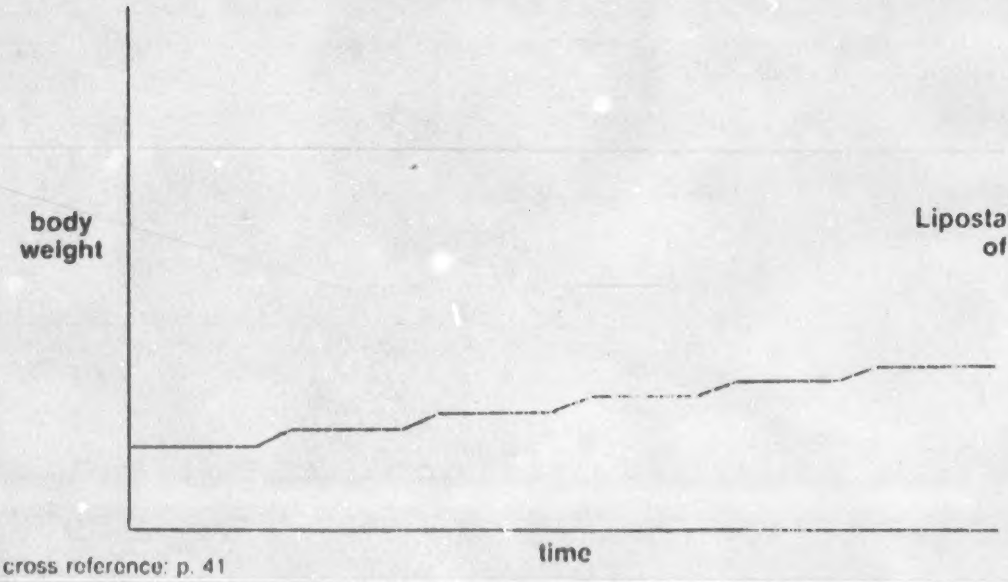
cross reference: p. 41



Comparison of fasting and 1,000 Calorie intake and their influence on weight loss.

cross reference: p. 41





Lipostatic regulation
of weight.

cross reference: p. 41

Definition of Terms

Aerobic: With oxygen.

Agility: The capacity to change direction of the body quickly and effectively.

Anaerobic: Without oxygen.

Atherosclerosis: A lesion of large and medium sized arteries. Deposits of lipid material and cholesterol in the intima (innermost coat) of the artery.

Balance: A kind of coordination involving vision, reflexes and the skeletal muscular system which provides the maintenance of equilibrium.

Cardiac Output: The amount of blood pumped out of the heart in one minute.

Cardiorespiratory: Pertaining to heart and lungs.

Cardiovascular: Pertaining to the heart and blood vessels.

Cardio-Vascular Endurance: The ability of the body to persist in strenuous tasks over a long period of time.

Coordination: The ability to adjust the senses with the muscles so as to produce accurate, smooth and harmonious body movement.

Ectomorphy: A type of body build which is predominantly ectoderm tissue. The body type is characterized by linearity and fragility and little subcutaneous fat.

Endomorphy: A type of body build in which tissues derived from the endoderm predominate. The body type is characterized by a preponderance of soft roundness, excess fat, large trunk and thighs.

Flexibility: The functional capacity of a joint to move through a normal range of motion. The muscular system is also involved.

Hypertrophy: The enlargement or over growth of an organ or tissue.

Lactic Acid: One of the end products of muscle metabolism. Produced during muscular contraction especially in the absence of oxygen.

Mesomorphy: A type of body build in which tissues derived from the mesoderm predominate. This body type is the triangular shaped muscle man.

Minute Volume: The volume of air exchanged per minute.

Obesity: The increase of body weight beyond the normal limits of the particular body type, as a result of excess fat.

Power: Power is sometimes confused with strength; however, speed of contraction is the basic ingredient which, when combined with strength, provides an explosive type of movement. Exmaples of this movement are: leaping, jumping, or throwing a ball.

Pulmonary Ventilation: Air taken in and out of the lungs.

Cross reference: p. 41

Reaction Time: The time required to respond or initiate a movement as a result of a given stimulus.

Somatotype: A particular type of body build.

Speed: The ability to move one's total body from one point to another. Speed is usually measured in terms of at least a 50 yard distance.

Strength: The capacity to select muscle groups to contract in a localized muscular effort.

Stress: In this text, high anxiety, high mental or situational pressures. Also physical stress refers to putting a load on the body physically so that it must work harder.

Stroke Volume: The amount of blood pumped by the heart with each contraction (beat).

Subcutaneous Fat: The layer of fat under the skin which can be pinched up and measured.

Thrombosis: A clot in a blood vessel.

Cross reference: p. 41

Wear Physical Education Attitude Scale

Directions: **Please read carefully!** Below you will find some statements about physical education. We would like to know how you feel about each statement. You are asked to consider physical education ONLY from the standpoint of its place as an activity course taught during a regular class period. No reference is intended in any statement to interscholastic or intramural athletics. There are no right or wrong answers. Read each statement carefully; opposite the statement place an "x" on the line which is under the word which best expresses your feeling about the statement. If you **Agree**, place an "x" under "agree." If you **Disagree**, put the "x" under "disagree." **Be sure to answer every statement**.

Agree Disagree

____ ____ 1 If for any reason a few subjects have to be dropped from the school program, physical education should be one of the subjects dropped.

____ ____ 2 Physical education activities provide no opportunities for learning to control the emotions.

____ ____ 3 Physical education is one of the more important subjects in helping to establish and maintain desirable social standards.

____ ____ 4 Vigorous physical activity works off harmful emotional tensions.

____ ____ 5 I would take physical education only if it were required.

____ ____ 6 Participation in physical education makes no contribution to the development of poise.

____ ____ 7 Because physical skills loom large in importance in youth, it is essential that a person be helped to acquire and improve such skills.

____ ____ 8 Calisthenics taken regularly are good for one's general health.

____ ____ 9 Skill in active games or sports is not necessary for leading the fullest kind of life.

____ ____ 10 Physical education does more harm physically than it does good.

____ ____ 11 Associating with others in some physical education activity is fun.

____ ____ 12 Physical education classes provide situations for the formation of attitudes which will make one a better citizen.

____ ____ 13 Physical education situations are among the poorest for making friends.

____ ____ 14 There is not enough value coming from physical education to justify the time consumed.

____ ____ 15 Physical education skills make worthwhile contributions to the enrichment of living.

____ ____ 16 People get all the physical exercise they need in just taking care of their daily work.

____ ____ 17 All who are physically able will profit from an hour of physical education each day.

____ ____ 18 Physical education makes a valuable contribution toward building up an adequate reserve of strength and endurance for everyday living.

____ ____ 19 Physical education tears down sociability by encouraging people to attempt to surpass each other in many of the activities.

____ ____ 20 Participation in physical education activities makes for a more wholesome outlook on life.

____ ____ 21 Physical education adds nothing to the improvement of social behavior.

____ ____ 22 Physical education class activities will help to relieve and relax physical tensions.

____ ____ 23 Participation in physical education activities helps a person to maintain a healthful emotional life.

____ ____ 24 Physical education is one of the more important subjects in the school program.

____ ____ 25 There is little value in physical education as far as physical well-being is concerned.

____ ____ 26 Physical education should be included in the program of every school.

____ ____ 27 Skills learned in a physical education class do not benefit a person.

____ ____ 28 Physical education provides situations for developing desirable character qualities.

____ ____ 29 Physical education makes for more enjoyable living.

____ ____ 30 Physical education has no place in modern education.

____ ____ 31 Physical education classes contribute to the general educational goals of social adjustment, cooperative attitudes, emotional control.

Cross reference: p. 42.

FITNESS

"Physical fitness is the ability to carry out daily tasks with vigor and alertness, without undue fatigue, and with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies."

Harrison H. Clark

Cross reference: p. 45

Important Components of Physical Fitness by Age Groups

	Pre-Puberty	Adolescence	Young Adult	Older Adult (25 and over)
1	Motor Fitness	Motor Fitness	PWC	PWC*
2	PWC	PWC	Body Weight	Body Weight
3		Body Weight	Relaxation	Flexibility
4			Flexibility	Relaxation

*PWC = Physical Working Capacity

cross reference: p. 46

Benefits of Training

Physiological differences between the "Fit" and the "Unfit" individual for a given physical activity; Benefits of Training.

Characteristics of the Fit Individual

At Rest

1 A somewhat lower heart rate

2 Somewhat lower rate and greater depth of breathing

3 Probably has developed new capillaries (especially at a high level of fitness)

4 Possibly a higher red blood cell count

5 Body adjusts better to changing environmental conditions--suffers less in heat

6 Doubtful if an increase in "alkaline reserve"

7 Better muscle tone or tonus -- greater strength in muscles, including respiratory muscles

8 Muscles richer in glycogen and creatine

During "Steady State" Activity

1 Heart rate less

2 Heart stroke volume greater

3 Greater cardiac output (minute volume)

4 Oxygen consumption less -- less minute-volume of breathing required

5 Breathing rate less and breathing depth greater

6 Return of heart rate to normal faster at end of activity

7 Return of blood pressure to normal faster at end of activity

8 Less rise in systolic blood pressure

9 Less rise in blood lactate.

10 Greater aid from "muscle pump"

11 Less rise in body temperature

12 Body adjusts better to environmental conditions -- suffers less from heat

13 Higher oxygen-carrying capacity of blood

14 Less rise in white blood cell count

Cross reference: p. 47

15 Circulorespiratory system more efficient in supplying oxygen to tissues and in removing metabolities

16 Increased diastolic blood pressure after activity

For Exhausting Work that Neither Can Sustain in a Steady State

1 Maximum heart rate about the same

2 Stroke volume greater

3 Greater cardiac output (minute volume)

4 Greater respiratory minute volume

5 Higher oxygen-carrying capacity of blood

6 Greater oxygen consumption because of #3, #4, #5

7 Rise in blood lactate less

8 Can withstand considerably higher lactate concentrate and thus can work longer before exhaustion

9 Greater oxygen debt (because of #8)

10 Less rise in temperature -- better able to regulate

11 Body adjusts better to environmental conditions -- suffers less from heat

12 Greater anaerobic energy reserves and greater utilization of them

13 Greater "deinhibition" of inhibitory controls -- more able to endure stresses (feelings of distress, etc.) because of being subjected to them more frequently (gets used to them); able to endure fatigue better

14 Nervous system more efficient in coordinating movements -- neutral pathways more often used

15 Better able to mobilize and transport fuel

16 Less destruction of red blood cells

17 Less rise in white blood cell count

18 Possibly greater amount of buffers in blood

19 Return of heart rate to normal faster after activity

20 Return of blood pressure to normal faster after activity

21 Higher diastolic pressure after activity

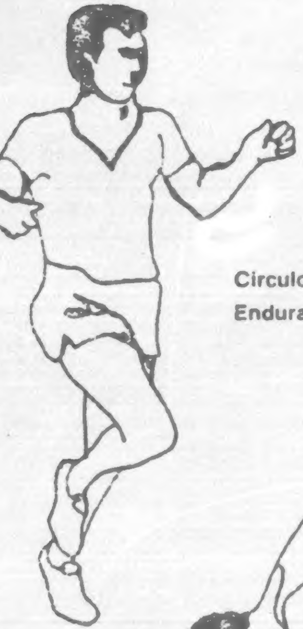
22 Breathing rate returns to normal faster

23 Even though greater oxygen debt it is "paid off" faster; therefore, return of lactate concentration to normal is faster.

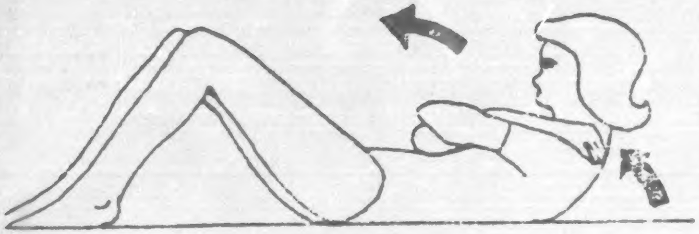
__Cross reference: p. 47

Health Related Fitness Components

Physical Fitness

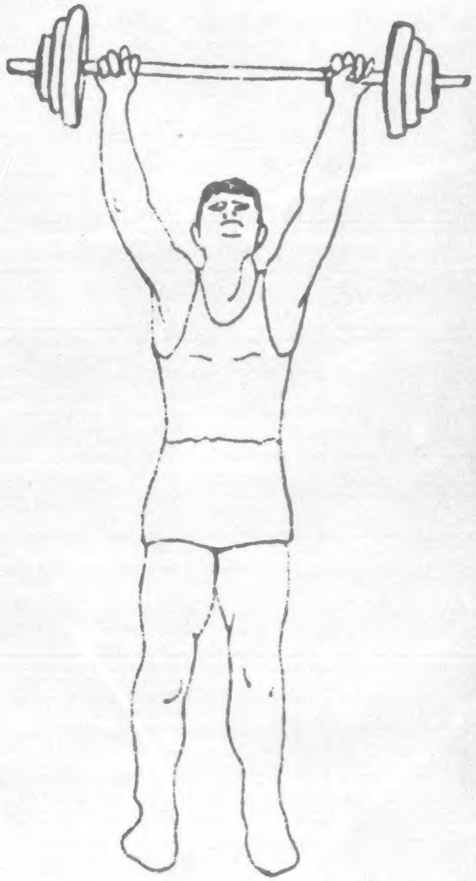


Circulo Respiratory
Endurance



Muscular Endurance

Flexibility



Strength

cross reference: p. 47

Appendix C

The Nebraska health-related agencies and organizations listed below have free or inexpensive materials available.

Hints on ordering materials:

1 Do not simply write the agency requesting "everything you have about ____________."

2 To help assure a fast response, request materials by correct title or name of publication, film, pamphlet.

3 Most of these agencies have a catalog or listing of materials they make available. Teachers should request a current catalog or materials list so they may identify titles, cost (if any), and if materials are available in classroom quantities.

Nebraska Heart Association, 3624 Farnam St., Omaha, Nebraska 68131.
--Pamphlets, wall charts and other printed material on heart physiology and heart problems; teacher and student resources.

American Cancer Society, Nebraska Division, 6910 Pacific, Overland Wolf Center, Suite No. 210, Omaha, Nebraska 68106.
--Printed materials on smoking and cancer; teacher resources.

American Lung Association of Nebraska, 7363 Pacific, Suite 212, Omaha, Nebraska 68114.
--Charts and other printed material on anatomy and physiology, smoking and disease control; teacher and student resources.

Nebraska Department of Public Institutions, P. O. Box 94828, State Capitol, Lincoln, Nebraska 68509.
--Printed materials on school health environment, mental health and chemical substances; teacher resources.

Nebraska Department of Health, 301 Centennial Mall South, Lincoln, Nebraska 68509.
--Printed materials on community health, dental health and nutrition; teacher and student resources.

Nebraska Society for the Prevention of Blindness, 120 South 42, Lincoln, Nebraska 68510.
--Printed materials on safety and school health services; teacher and student resources.

Nebraska Department of Education, 301 Centennial Mall South, Lincoln, Nebraska 68509.
--Printed materials on dental health, anatomy and physiology, consumer education and school health services; teacher and student resources.

Dairy Council of Central States, 6901 Dodge, Room 104, Omaha, Nebraska 68132.
--Posters, booklets and leaflets on nutrition and its relation to general and dental health; physical fitness and weight control; teacher and student resources.

NETCHE, Nebraska Telecommunications Center, P. O. Box 83111, Lincoln, Nebraska 68501.
--Various television segments on health-related topics. See concept pages for program titles.

Educational Service Units, various locations around Nebraska.
--Materials on values and audiovisual health materials.

SP0162[illegible]

REVISED GUIDELINES FOR COMPREHENSIVE HEALTH EDUCATION

Senior High

Nebraska Department of Education
301 Centennial Mall South
Lincoln, Nebraska 68509

State Board of Education
and
State Board of Vocational Education

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Dorothy Creigh, vice-president	Hastings	District 5
James Monahan	Omaha	District 2
Walter M. Thompson	Oakland	District 3
Don H. Lienemann	Papillion	District 4
Margaret Lockwood	Gering	District 6
Marilyn Fowler	Lexington	District 7
Bernard F. Costello	Omaha	District 8

Revised Guidelines for Comprehensive Health Education
Grades 10-12

Developed under the direction of
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Issued by
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Preface

The Comprehensive Health Education Act (79-1270) adopted by the Nebraska State Legislature in 1971 requires that:

1 instruction in comprehensive health education shall take place in all schools;
2 the Commissioner of Education shall prepare and distribute, upon request, teaching aids and materials for effective courses in comprehensive health education; and
3 schools failing to meet the provisions of the act will be guilty of a deviation from the approval and accreditation rules and regulations.

Acting upon the directive of this legislation, the Department of Education with the assistance of an advisory committee developed *Guidelines for Comprehensive Health Education: A Conceptual Approach*, and made this publication available to schools in 1972. Those guidelines suggested that a truly comprehensive program should include 17 major topics of instructions. Concepts and teaching activities were suggested for each instructional topic.

Local school systems were urged to use the guidelines as a foundation or "working tool," to be of assistance as schools designed instructional programs which met the specific needs and interests of their pupils while being consistent with the educational philosophies of their local communities. Decisions about program content, selection of instructional materials and teaching methodology were and are the responsibility of each school system.

Since the passage of the Comprehensive Health Education Act and the subsequent development of health curriculum guidelines, the Department of Education has received numerous requests from school administrators and teachers for assistance in two common areas:

1 the development of observable and/or measurable instructional objectives; and
2 the identification of suitable supportive instructional materials.

It is because of these continued requests that the Department of Education has undertaken revision of the comprehensive health education curriculum guidelines. This publication (for grades 10-12) is the last of five such guidelines which span grades K to 12.

A majority of the concepts suggested in the original health guidelines are included in this revision edition. The concepts have been reorganized, however, into seven or fewer major topic areas rather than the original 17 areas. Learning objectives have been designed to assist teachers in determining if their students have attained the concepts. Supportive media which can assist in the learning process have been identified for each concept.

According to the desires of the local school system, instructional television can play a major supporting role in utilization of these guidelines. Existing and newly-developed ITV health education telelessons will be broadcast on a schedule which matches the scope and sequence of the health concepts and learning objectives found in these guidelines. This coordinated combination of print and other media resources is the most comprehensive curriculum project ever undertaken by the Department of Education.

These curriculum guidelines are suggestions. How the guidelines are used is a decision of each local school district. Each school district decides the specific content to be included in its instructional program, and at which grade levels that content is to be taught.

M. Anne Campbell
Commissioner of Education

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Introduction

Health Education — A Statement of Philosophy

Traditionally, man has been concerned with the interaction between his body and his environment, and the premise has been that physical health is an end in itself. An understanding of man's biologic problems, the means to physical health, the nature of diseases and the signs and symptoms suggesting ill health are vital to everyone. Howver, physical health is in itself only a means to an end. Man should not be concerned only with the shell which separates him from his environment, but with his total being.

The concept of total health implies an understanding of a sound body and the appreciation of one's potential and individual worth. It permits expression of an individual's creativity and enhances the dignity and satisfaction that comes through individual ability to give of oneself. Man cannot assume the state of total health alone, for everyone functions with others and within his or her environment.

Approaches to total health education must employ parallel programs, on the one hand aimed at children, their families and their environment, and on the other hand striving to develop new understandings on the part of teachers and school administrators. The successful realization of education for health results from the combined efforts of individuals who complement the activities of each other, supplement the information offered and reinforce the attitudes developed in youth by challenging them to think.

An understanding of the social phenomena underlying new knowledge and emerging problems appears to be particularly significant in relation to curriculum development focused on health education. Because this area of study is concerned with the individual — not as a biological organism, an intellectual or emotional being, or a social creature — but rather as a whole person, an entity, all of the related forces basic to curriculum development seem to command equal consideration.

Good health is not accidental. It is a product of nature and culture, and is related to understanding and values. Good health must not only be philosophical; it must be capable of extension into the realities of daily living. Good health and related understanding should not be, and must not remain, the right of a privileged few. It is to this end that the Department of Education, assisted by the Nebraska Comprehensive Health Education Advisory Council, has undertaken preparation of a guide for the sharing of basic concepts and objectives relevant to health education.

Approaches to total health education must employ parallel programs, on the one hand aimed at children, their families and their environment, and on the other hand striving to develop new understandings on the part of teachers and school administrators.

Health Education in Education

Through the years the term "health" has taken on many different meanings. In ancient societies physical well-being and rules for hygiene were stressed. One of our first recorded references to a concept of health was by Decmus Junius Jebenal (50 - 130 A.D.) who wrote about "a sound mind in a sound body." Later, during the 17th and 18th Centuries, John Locke was often quoted: "A sound mind in a sound body is a short but full description of a happy state in this world; he that has these two has litle to wish for."

Somewhat later, around the mid-19th Century, Horace Mann, secretary to the first board of education in the United States in Massachusetts, was instrumental in stressing the importance of physical well-being and emphasizing health education.

However, mental and social well-being were not appreciably emphasized until the mid-20th Century. Through the years broader and more complete meanings of health have evolved. Today our society is concerned not only with curing or treating sickness or preventing disease, but is also concerned with raising the level of individual health and well-being.

Health is now considered to be a dynamic quality of life rather than a static entity. It is the result of the interaction of many factors and conditions. Hoyman emphasizes this when he refers to health as: " . . . a moving target . . . a dynamic ecologic result involving the interaction of many factors and conditions . . . "[3]

Health is a combination of physical, mental and social well-being, all dynamically interrelated. The individual functions as a whole, as an integrated individual with each dimension of health influencing the others. So physical illness has an effect on emotional well-being and social relationships. The psychosomatic aspects of health illustrate dynamic interrelationships between various dimensions of health.[4]

Educators have been consistently vocal in their expression of concern for the role of health education in education. One of the earlier and more important statements emanated from the 1918 report by the Commission on the Reorganization of Secondary Education appointed by the National Education Association.[9] The report declared health to be one of the seven cardinal principles of education.

The Educational Policies Commission [6] in **The Purpose of Education in American Democracy** (1938) described desired pupil outcomes in each of four groups of educational objectives: a) self-realization; b) human relationships; c) economic efficiency; and d) civic responsibility. In education for self-realization, the commission stated that the health-educated person:

1 understands the basic facts about health and disease;
2 protects his own health and that of his dependents; and
3 works to improve the health of the community.

More recently, the Educational Policies Commission,[5] in **An Essay on Quality in Public Education,** stated that the elementary curriculum should, among other things, teach the essentials of safety and personal health and promote physical coordination and skill.

In a statement about the objectives of schools prepared by the American Council on Education, the objective of health education was to lead students to improve and maintain their own health and to accept their share of responsibility for protecting the health of others. [1]

Other significant bodies have emphasized the role of health education, including the White House Conference on Education in 1955. [8] In response to this question, "What should our schools accomplish?," the conference report recommended that schools help each pupil to develop physical and mental health and wise use of time, including constructive leisure pursuits.

Health is now considered to be a dynamic quality of life rather than a static entity. It is the result of the interaction of many factors and conditions.

A more recent significant statement about the outcomes of education is included in the report of the National Education Association's, **Project on Instruction.** It states, in part, ". . . the content of health instruction belongs in the school curriculum because such knowledge is necessary, is most efficiently learned in school and no other public agency provides such instruction." [7]

As the preceding statements indicate, health education has been an objective of education for many years. It is a discipline which focuses on and strives for maximum physical, mental and social efficiency for the individual, the family and the community.

Health is a broad area and it is positive in its implications. Multiple factors contribute to achievement of a state of health. The health education curriculum must be built around the biological and social facts and principles which relate to man's existence, survival and adjustment. Health education may be conceived as an applied science which rests on solid scientific and social foundations.

Facts and principles, drawn from such scientific areas as genetics, anatomy, physiology, bacteriology, microbiology and psychology, as they can be applied to human living and human health, are essential. Likewise, facts and principles arising from sociology, social psychology, anthropology, economics and political science, known to be significant in understanding health needs and problems, become equally important in the health education process. As such, health education is a discipline in which the relevant knowledge and ideas from several fields are combined and synthesized.

Health Education — A Definition

Have you ever been asked: What is health education? How does what you teach in health education relate to a child's everyday involvement with self, home, school and community? Are facts as important as attitudes in health education? In other words, have you ever been asked to put into words just exactly what you believe health education really is, or is not, and how it contributes to the total educational program of each child? Perhaps if you have not been asked by someone else, you have asked yourself questions similar to these.

Such questions must be probed until meaningful answers are set forth. While these guidelines are devoted to helping health educators, administrators and other educational personnel involved with health programming approach a better understanding of school health education, its programs, methods and application, the American Medical Association and the National Education Association, through their joint Committee on Health Problems in Education, [2] have succinctly outlined the essential elements in the definition of what health is, what it is not, and how it can relate meaningfully to the school.

Health Education Is:

Education for health for healthful living of the individual, family and community.

An academic field and subject. All of its content and objectives are intellectual and academic in nature. Its content must have meaning and purpose for students now as well as for future students.

A relatively new discipline. The natural (biological), the behavioral and the health sciences provide its foundation.

Facts, principles and concepts pertaining to healthful living. These constitute its body of knowledge.

The body of knowledge identified, organized, synthesized and utilized in appropriate courses and experiences; it is sequentially arranged to form the discipline.

Derived from sociology, psychology, educational psychology and the behavioral sciences — its purpose is to change favorably health behavior (knowledge, attitudes, practices).

A needed approach to bridge the gap between scientific health discoveries and man's application of these discoveries in daily life.

Health Education Is Not:

Hygiene of yesteryears. It is not "blood and bone" hygiene, nor is it physiological hygiene.

Anatomy or physiology or both of these combined. These fields serve as its foundation, but do not contribute the major concepts of its body of knowledge. They are necessary as background to understand health concepts applied to living.

A pure science, but an applied science. It is an applied science concerned with man's understanding of himself in relation to health matters in a changing society.

Physical education. Health education and physical education have similar goals and are closely related, but their activities and the conduct of activites are completely different. Sound physical education programs properly conducted contribute to the health of the individual.

Physical fitness. It contributes to the total fitness of man. It is not synonymous with muscle fitness.

Driver education. Health education is related to driver education through its safety area. Driver education is but one facet of safety.

Contributing to the well-educated individual by providing meaningful health experiences which can change health behavior. (Educational Policies Commission, **The Purpose of Education in an American Democracy,** 1938).

Best achieved by developing the rational powers of people (critical thinking), enabling them to make wise decisions and to solve personal, family and community health problems. (Educational Policies Commission, 1961.)

Based upon and improved through basic and applied research.

Best conducted by professionally prepared health educators from accredited colleges and universities.

An integral part of the curriculum at every level and an essential element in the general education of all students.

The educational component of a school, college or university health program (instructions, services, environments).

A requirement course organized to deal with legal provisions of alcohol, narcotics and fire prevention. These are essential problems that should be incorporated with other basic problems to provide a structured course or program.

A rainy day or incidental instruction. Health education must be carefully planned and incorporated into the curriculum. It must be taught in a wholesome learning environment in which pupil activities can be carried out, particularly through problem-solving situations under the guidance of professionally prepared health educators.

Just grooming practices such as tooth brushing and hair combing. Health education has gone far beyond grooming.

What Does Health Education Mean for Your School?

Through adequate education for health, you can provide students with:

Opportunities to discuss problems of interest to them, to assess the values of others, and to identify with an adult directly interested in the problems of their age group.

The opportunity to use real problems in studying the process of critical thinking.

Interest in the health and safety aspects of their own daily activities.

A sense of responsibility for personal health.

A feeling of responsibility for community health.

A critical attitude toward advertising of health services and products.

An understanding of growth and development.

An opportunity to develop the ability to understand and interpret health information.

The knowledge and skill to understand and utilize reliable health care.

An appreciation for good health.

Pride in developing and maintaining good health.*

---

*This discussion of what health is and is not, and of how it can relate meaningfully to your school is reprinted with the permission of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association.

Factors Affecting Classroom Climate

Following are some factors which may influence the students' ability to acquire positive concepts through health education.

A Healthful School Environment

The school should be a laboratory where the individuals have opportunities to explore their own ideas and to develop personal values and understandings. Schools can contribute to the health (and educational achievement) of children and youth by making it possible for them to live healthfully while they are in school.

A Comfortable Social-Emotional Climate and an Alert Interested Teacher

The teacher guides the learning of desirable social attitudes, i.e., cooperation and fair play, as well as activities and interests to help in growth and maturity development. The teacher needs to be aware of individual health needs of students. An important part of developing a healthful school environment is the social-emotional climate which the teacher establishes in the classroom. The climate must render the student free to inquire, to question, to investigate and to discuss with both the teacher and fellow students. Any threat of embarrassment or reproof must be eliminated if the learners are to have the opportunity to develop individually according to their needs.

An Understanding of Goals for Self-Direction

Students must learn to assume responsibility for care and maintenance of their own health. After leaving school, when self-direction is required, the student will need to know how to plan and carry out a program of healthful living. To help achieve this goal, it is imperative that students be given opportunities for analysis, evaluation and application of health information through various experiences. Without such opportunities it becomes increasingly difficult to expect that they will do so after the security of the school environment is behind them, based solely on theoretical examination of information.

Guidance in Meeting Health Problems

The health of children — physical, mental and social — depends upon what they do for themselves more than upon what is done for them. While the home and community remain the major influences in determining the health attitudes of children, it becomes the responsibility of the school to serve as a catalyst by effecting a meaningful merger of all these influences upon the life of the individual.

Meaningful Units Adapted to the Maturity Level of the Children

Programs in health education must be continuous — taught on a regular basis. The content of the program is determined by the needs and interests of the children and by the stage of growth and maturity which they have reached. Readiness is an important factor for learning.

Motivation for Learning

Before learning can be meaningful, a student's interest must be stimulated. The desire to learn is an essential prerequisite for critical thinking and the teacher is challenged to help each individual develop this desire according to his or her interests and needs. The opportunity to make decisions, to accept responsibility for choices and to aid in planning, developing and evaluating projects will increase student interest and motivation.

Opportunity to Use Real Life Situations as a Basis for Interests in Health

Health is more than a subject to be taught. It is a way of life. As such it presents daily opportunity for development of attitudes, concepts and skills that will help students to become healthier, happier individuals. Teachers can have a dynamic impact upon students if they will use these daily interactions to best advantage. To serve as an exemplar to which the learner may look with pride can be one of the teacher's greatest assets. One's actions speak so loudly that what is said can scarcely be heard.

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UTILIZATION OF REVISED GUIDELINES

These revised guidelines for comprehensive health education have been designed to offer teachers suggestions which can assist in providing varied learning opportunities for students.

While acquisition of accurate health knowledge is important, of far greater concern is formation of desirable personal and public health attitudes, values and practices. With this concern in mind, instructional objectives have been developed which are stated in measurable and/or observable terms. It is hoped these objectives will assist teachers in determining if their students are developing desirable health attitudes, values and practices.

These revised guidelines contain four major topic areas. These topics and their areas of concentration are:

1 The Body — anatomy, physiology, tissues, systems, heredity, physical activity, nutrition;

2 The Family — structures, function, responsibilities;

3 Decisions — values, stress, chemical substances, dependence;

4 Environment — diseases, disease control, pollution, cancer and heart disease, consumer health.

The format of these guidelines has been designed to provide the teacher with:

1 health concepts which are appropriate for the senior high student;

2 instructional objectives written in measurable and/or observable terms;

3 suggested teaching strategies and classroom activities; and

4 suggested support materials.

Concept	Instructional Objective	Suggested Activities	Media Resources
A short statement which identifies a health concern.	**Two or more statements which will assist the teacher in determining if the student has attained the health concept.**	**Suggested teaching strategies and activities which will assist the student in attaining the instructional objective.**	**Suggested support material which may be used as a teaching activity.**
The human body is desribed by specific anatomical terms.	The student should be able to: 1 Identify anatomical terminology.	1 Through lecture, demonstration, readings and audio-visual aids, describe the basic body planes, directions and movements. (e.g. superior is towards the head; the eyes are superior to the mouth.) 2 Construct a conceptual model of basic body planes. 3 Form a chart describing the position of various structures as anterior, superior, transverse, etc.	1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.* 2 "Kinesiology," a NETCHE segment. (See Appendix C, p. 135.) 3 Transparency masters in Appendix B (pp. 112 and 113): a) body planes and directions; b) list of directional terms and definitions. *Preview films before using with students.

These guidelines also contain three appendices.

> Appendix A contains ITV telelesson overviews and activities. Appendix B contains illustrations which may be used for making transparencies and reproductions. Appendix C lists Nebraska-based agencies and associations which have free or inexpensive materials available.

It should be stressed that this is only a guide. The ideas presented are intended as suggestions which schools may use as they develop a health program for senior high students. This guide does not make precise recommendations about which concepts or areas should be covered at grades 10 through 12. The State Board of Education and the Department of Education have consistently stated that course content and the selection of instructional materials are concerns of each local school system. Such decisions should be based upon the specific needs and interests of the students as well as the educational philosophy of the local community.

Health education is very broad in scope and draws upon the physical, social and life sciences. Thus a comprehensive health education program is interdisciplinary in nature. Therefore, it is strongly suggested that all teachers within a school system work together to coordinate their efforts to avoid repetition or omission of content.

Innovative teachers will not limit themselves to the suggestions in these guidelines but rather will go beyond to create their own original learning situations.

The Body

This unit includes the areas of anatomy and physiology, human growth and development and nutrition.

The body is truly a marvelous machine. The presentation of these concepts will enable the student to better understand how it works and to become a health-educated individual.

Notice to Teachers and Administrators

This unit could be considered controversial in your community. Please keep in mind that this is a teacher's guide of suggested concepts and activities for senior high students. Concept and activity materials in these guidelines are not intended for student use.

Recognizing that philosophical, religious and ethnic differences exist among Nebraska communities, the Department of Education recommends that these guidelines be examined carefully by the health education teacher and discussed with an administrator. If others in your community have an interest, seek their input and support.

These guidelines (and the guidelines for elementary and junior high) have been mailed to you in loose-leaf form. This was done so that you may modify these materials to fit your school and community needs.

Concept	Instructional Objectives	Suggested Activities	Media Resources
1 The human body is described by specific anatomical terms.	The student should be able to: 1 Identify anatomical terminology.	1 Through lecture, demonstration, readings and audio-visual aids, describe the basic body planes, directions and movements. (e.g. superior is towards the head; the eyes are superior to the mouth.) 2 Construct a conceptual model of basic body planes. 3 Form a chart describing the position of various structures as anterior, superior, transverse, etc.	1 "About the Human Body" and "Human Body" (entire series) films from the Nebraska Department of Health.* 2 "Kinesiology," a NETCHE segment. (See Appendix C., p. 135.) 3 Transparency masters in Appendix B (pp. 109 and 110). a) body planes and directions; b) list of directional terms and definitions. *Preview films before using with students.

Concept	Instructional Objectives	Suggested Activities	Media Resources
2 The fundamental unit of structure and function in an organism is the cell.	The student should be able to: 1 Define and describe the cell and all its parts. 2 Identify parts of a cell: a) Plasma or cell membrane; b) Protoplasm - the living matter of cells; c) Nucleus - the nuclear membrane; d) Nucleoplasm; e) Chromosomes (DNA and protein); f) Cytoplasm (cytoplasmic organettes). 3 Describe different functions which cells perform.	1 Using text, models, media resources and demonstrations identify cell structures. 2 Describe the functions performed by cells: metabolism, circulation, assimilation, respiration, excretion, secretion, locomotion, sensitivity, reproduction. 3 Invite a guest speaker with expertise in cell anatomy and physiology (pathologist, physician, biologist) to talk with students.	1 Transparency master in Appendix B (p. 111): cell structure. 2 "Importance of Genetics in Today's World" and "The Origins of Life," NETCHE segments. (See Appendix C, p. 135).* 3 Histology, by Arthur W. Ham, J. P. Lippincott Co., Sixth Edition. *Preview films before using with students.
Cells are arranged in tissues; tissues of the same type form organs, and associated organs form systems.	4 Define tissues, organs and systems.		
All the systems of the body work together to maintain a constant internal environment (homeostasis).	5 Define homeostasis and describe why it is important to organisms.		

Concept

3 A group of cells similar in origin, structure and function are called tissues.

Epithelial, connective, muscular, nervous and vascular are the five basic types of tissue; differentiation exists within the various types of tissue.

Instructional Objectives

The student should be able to:

1 Define epithelial tissues:
   a) Epithelial tissue covers the body, lines internal organs and forms glands;
   b) Epithelial tissue protects, absorbs and secretes.

2 Define the difference between covering as a function and lining as a function. (Connective tissues hold tissues together, provide support, and store fat and other materials.)

3 Describe the five basic types of tissue and demonstrate knowledge of their specific functions.

4 Describe the importance of cells and tissue specialization to organisms. Describe epithelial and connective tissues functions and value.

Suggested Activities

1 Obtain prepared slides and/or drawings of the five basic tissues (epithelial, connective, muscular, nervous, vascular). Have the students identify the tissues and describe the basic function of each.

2 Present the students with a list of structures (heart, skin) and have them describe the types of tissue composing the structure.

3 Study a model or picture of the skin as an example of how epithelium covers and protects.

4 Examine a slide, model or drawing of an internal organ as an example of how epithelium covers and protects.

5 Obtain prepared microscopic or 35mm slides to show the types of connective tissue.

6 Obtain a specimen of a fresh joint from a butcher shop or slaughter house to show tendons, cartilage and ligaments.

7 Observe dissection of a frog or other small animal in the biology department, demonstrating adipose and other tissues.

Media Resources

1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.*

*Preview films before using with students.

Concept	Instructional Objectives	Suggested Activities	Media Resources
4 The skeletal system is a multi-purpose system which: a) Provides a framework of support; b) Provides protection for internal organs; c) Functions as a storage center for minerals; d) Produces blood cells.	The student should be able to: 1 Describe four functions of the skeletal system. 2 Classify bones into four categories based on shape. 3 Label all the bones of the appendicular and axial skeleton. 4 Differentiate between facial bones and cranial bones. 5 Identify the skeletal division to which a given bone belongs. 6 Describe the composition and structure of a typical long bone. 7 Describe the epiphysial disk or "growth plate" and its importance in growth and development.	1 Use a skeleton and/or a transparency of a skeleton to demonstrate the different types of bones and how they function in protection, support and movement. 2 Obtain a bone from a butcher shop. Examine marrow, peristeum, ligaments, articular cartilage. 3 Obtain a disarticulated skeleton. Lay the bones out and have the students identify them with reference to name, shape and skeletal division. 4 Compare an X-ray of bones from a young child, a teenager and an adult. 5 Have a local physician talk about fractures, growth and repair of bones.	1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.* 2 Transparency master in Appendix B (p.112): skeletal system. *Preview films before using with students.

Concepts	Instructional Objectives	Suggested Activities	Media Resources
5 The body has three types of muscle tissue (skeletal, cardiac, smooth).	The student will be able to: 1 Describe the three types of muscle tissue in the body (skeletal, cardiac, smooth).	1 Have the students observe the dissection of a frog or other small animal. Have them identify muscle, tendons, fat.	1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.*
Muscle tissue is specialized for contraction.	2 Explain the mechanics of a muscle contraction.	2 Visit a medical or dental school and study a human cadaver. Have the students palpate some superficial muscles and feel their movements.	2 Transparency master in Appendix B (p. 113): muscular system. 3 Contact medical or dental schools for possible field trips.
Skeletal or voluntary muscles enable movement.	3 Define the terms which describe skeletal muscle actions.	3 Invite a physical educator, coach or trainer to speak about muscle conditioning and injuries to muscles.	*Preview films before using with students.
	4 Locate and describe the functions of given muscles.	4 Have the students identify major skeletal muscles on charts, slides or transparencies.	
Skeletal and cardiac muscles will enlarge when exercised.	5 Define atrophy and hypertrophy and explain the benefits of muscular exercise.		

Concepts

6 The nervous system is divided into two parts; the central nervous system and the peripheral nervous system.

The nervous system conducts impulses, integrates the body's activities, interprets stimuli and stores information.

Instructional Objectives

The student should be able to:

1 Describe the functions of afferent and efferent neurons.

2 Describe the basic structure of a typical neuron.

3 Identify the components of the central and peripheral nervous system.

4 Differentiate between central and peripheral nervous system.

5 Describe a reflex arc.

6 Describe what happens if afferent and/or efferent neurons are damaged.

7 Describe the major surface structures of the brain.

8 Demonstrate an understanding of the seriousness of interruptions to the spinal cord.

9 Demonstrate an understanding of cerebral spinal fluid, its formation and functions.

Suggested Activities

1 Study the shape of the vertebral column and note how the spinal cord passes through it. Also note how peripheral nerves exit from the vertebral canal.

2 Examine a model of a cross section of a spinal cord.

3 Study models of the human brain.

4 Obtain a fresh animal brain and a preserved brain and study basic structures.

5 Demonstrate the potellar reflex. Describe why it is used by the physician.

6 Have students shine a light into one anothers' eyes. Describe what happens and why it happens.

7 Invite a neurologist to speak on peripheral nerve injuries, brain injuries or diseases of nerves.

8 Describe what happens when a leg or arm "goes to sleep." Relate how this simulates loss of sensory nerves.

9 Invite a physical therapist to speak on rehabilitation of patients with nerve injuries.

Media Resources

1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.*

2 Transparency master in Appendix B (p. 114): nervous system.

*Preview films before using with students.

Concept	Instructional Objectives	Suggested Activities	Media Resources
7 Basic components of the circulatory system are blood, blood vessels and the heart.	The student should be able to: 1 Describe the primary function of blood, blood vessels and heart. 2 Identify and describe the functions of erythrocytes, leukocytes, platelets and blood plasma. 3 Identify the difference in structure and function among arteries, veins, arterioles, capillaries and venules. 4 Describe the basic circulation to the head, upper extremity and lower extremity. 5 Describe the pathways of pulmonary circulation. 6 Identify basic structures of the heart (atria, ventricles, valves, vessels, pericardium). 7 Define and describe arteriosclerosis, and atherosclerosis and aneurysm. 8 Explain what basically happens during a heart attack. 9 Explain the importance of good diet and exercise as related to the circulatory system. 10 Explain what blood pressure is, how it is measured, and how it relates to good health. 11 Explain the Rh factor.	1 Obtain some microscopic slides of blood smears; have the students identify cells. 2 Invite a medical technologist to speak about various blood testing procedures. 3 Invite a physician to discuss factors involved in open-heart surgery. 4 Have students learn to take blood pressure by practicing on each other. 5 Compare the resting heart rates of physically active individuals with those of non-active individuals. Discuss results. 6 Obtain 35mm slides or use texts to demonstrate arterial degeneration. 7 Obtain a heart model and have the students identify basic structures. 8 Obtain a fresh animal heart from a butcher shop and dissect it. Compare structures with those learned on the heart model. 9 Fill half-gallon plastic milk bottles with colored water to demonstrate how much blood the heart pumps in one minute.	1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.* 2 Transparency masters in Appendix B (pp. 116 and 117): heart and the heart's pumping cycle. 3 "The Wonderful Human Machine," published by the American Medical Association, 535 Dearborn Street, Chicago, Illinois 60610. *Preview films before using with students.

Concepts

8 The exchange of gases between living cells and the environment is called respiration.

The two types of respiration are internal and external.

A number of common afflictions may interfere with proper functioning of the respiratory system.

Instructional Objectives

The student should be able to:

1 Locate and name the organs of the respiratory system.

2 Describe the changes in intrathoracic pressure during inspiration and expiration.

3 Identify the difference between internal and external respiration.

4 Explain the factors which determine the exchange of gases in external respiration (partial pressure, membrane permeability, membrane surface, area, rate of blood flow, chemical reactions of blood).

5 Describe how hemoglobin unites and disassociates with oxygen and carbon dioxide.

6 Explain how incoming air is warmed, moistened and cleared.

7 Describe the factors which influence respiratory function (CO_2, pH, O_2, exercise).

8 Describe the effects of smoking on respiration and be familiar with statistics on smoking and lung cancer.

9 Define "eupnea," "duppnea," "hyperpnea" and "apnea."

10 Describe the following clinical considerations: a) anoxia; b) hypoxia; c) asthma; d) Cheyne-Stokes breathing; e) emphysema; f) pneumonia; g) tuberculosis; h) pneumothorax.

11 Describe the beneficial effects of exercise on the respiratory system.

Suggested Activities

1 Study models, slides and charts of the respiratory organs.

2 Invite a physician to speak on smoking hazards and describe common lung diseases and how they are treated.

3 Obtain a spirometer and calculate each student's vital capacity. Then explain total volume, residual volume, total lung capacity.

4 Have a local cardio-pulmonary resuscitation (CPR) instructor demonstrate and speak about the importance of CPR training.

5 Have the class become certified in CPR as a class project.

6 Have the physical educator or coach speak on the beneficial effects of exercise in respiration.

7 Obtain a bell jar apparatus to demonstrate the action of the diaphragm.

Media Resources

1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.*

2 Transparency masters in Appendix B (p. 118): respiratory system.

*Preview films before using with students.

Concept

9 The digestive system is composed of numerous organs which as a system convert food into nutrients for the nourishment of cells.

Instructional Objectives

The student should be able to:

1 Locate and name all the digestive organs and the gastrointestinal tract.

2 Describe the function of the organs forming the gastrointestinal tract.

3 Explain the function of saliva, gastric juices, pancreatic enzymes, intestinal enzymes and liver bile.

4 Describe the needs of the body for the three basic foods (protein, carbohydrates, fats).

5 Explain the difference between vitamins and minerals.

6 Explain the function of the different vitamins.

7 Describe factors leading to obesity.

8 Describe basic causes of some digestive problems (obstructions, gastroenteritis, ulcers, gallstones, vomiting, diarrhea, appendicitis, constipation, hepatitis).

9 Describe effects of diet and starvation on body tissues.

10 Define metabolism, catabolism, anabolism.

11 Explain metabolic rate.

12 Explain calories.

Suggested Activities

1 Study charts and models of digestive organs.

2 Invite a nutritionist or physician to speak on nutrition.

3 Invite a physician to speak on GI problems and ulcers.

4 Have students chart their eating habits for one week and calculate percentage of carbohydrates, fats and proteins in their diets. Calculate daily caloric intake.

Media Resources

1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.*

2 Transparency master in Appendix B (p. 119): digestive system.

3 "The Wonderful Human Machine," published by the American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610. (100 copies at 40¢ each.)

*Preview films before using with students.

Concept	Instructional Objectives	Suggested Activities	Media Resources
10 The endocrine system is composed of widely dispersed glands.	The student should be able to: 1 Name and locate the endocrine organs. 2 Explain the differences between exocrine and endocrine glands. 3 Describe the source and effect of pituitary hormones. 4 Describe the relationship between hypothalamus and pituitary. 5 Describe the basic effects of thyroid and parathyroid secretions. 6 Describe the basic effects of the pancreatic hormones. 7 Describe the basic effects of the adrenal medulla and the adrenal cortex. 8 Describe the effect of and interrelation of gonadal hormones and pituitary secretions. 9 Describe basic problems resulting from hyposecretions and hypersecretions of various hormones (e.g. diabetes insipidus and mellitus -- goiter, cretinism, airomegaly).	1 Study gland locations using charts, texts and drawings. 2 Lecture on and discuss basic functions of each endocrine gland, always emphasizing interrelationships. 3 Invite a physician to speak on common endocrine disorders and their treatment. 4 If possible, dissect a laboratory rat and locate the endocrine glands. 5 Show pictures of afflictions caused by endocrine disorders.	1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.* 2 Transparency master in Appendix B (p. 120): endocrine system. *Preview films before using with students.

Concepts	Instructional Objectives	Suggested Activities	Media Resources
11 Perpetuation of the species is a necessity.	The student should be able to: 1 Identify the main function of the reproductive system: to insure perpetuation of the species.	1 Study models, charts and texts of the reproductive system. 2 Invite a doctor to speak on the reproductive processes.	1 "About the Human Body" and "Human Body" (entire series), films from the Nebraska Department of Health.* *Preview films before using with students.
Specific organs exist which are specialized for reproduction in males and females. *Note: Title IX of the Educational Amendments of 1972 provides that boys and girls may be separated for instruction dealing with human sexuality. Check your school's policy regarding this matter.*	2 Describe the essential organs involved in male and female reproduction: testes and ovaries. 3 Describe the difference between sperm and egg. 4 Describe functions of testes, epididymis, vas deferens and ejaculatory duct. 5 Identify the source of fluids which make up semen. 6 Describe the source of hormones that initiate spermatogenesis and testosterone production. 7 Identify the sources of estrogen and progesterone. 8 Describe the layers of the wall of the uterus. 9 Identify the phases of the menstrual cycle. 10 Explain and discuss fertilization and implantation times.		

Concept	Instructional Objectives	Suggested Activities	Media Resource
12 Human growth patterns are influenced by hereditary and environmental factors.	The student should be able to: 1 Define heredity as the sum of all characteristics passed on from one generation to the next. 2 Explain that potential for growth is established by heredity and modified by environment. 3 Identify the following as inherited traits: eye color, freckles, hair and skin color, blood type, body build, height potential, certain mental traits such as memory and general mental ability. 4 Define environment as the surroundings -- both natural and humanmade. 5 Explain how heredity and environment influence physical, mental and social growth developments. 6 Explain that while most people follow the same general pattern of growth and development, there is a wide range of variation within the normal growth pattern.	1 Many characteristics are the result of both heredity and environment. For example, the trait for freckles is inherited. But for freckles to appear, one must be exposed to sunlight. Ask the students to explain other characteristics that are the result of the combined effects of heredity and environment. 2 Assign the students to research the work of Gregor Mendel, Charles Darwin and Sir Francis Galton, who made significant discoveries concerning heredity.	1 "The Genectics Series," films from the University of Nebraska-Lincoln Instructional Media Center.

Concept	Instructional Objectives	Suggested Activities	Media Resources
13 Human growth patterns are influenced by the foods one eats.	The student should be able to: 1 Explain how diet influences physical, mental and social development. 2 Describe how good and poor nutrition can affect one's appearance and self confidence. 3 Discuss the relative importance of various foods in one's diet. 4 Explain how lack of sufficient nutrients can lead to nutritional deficiency diseases. 5 Discuss the importance of nutrition before and during pregnancy to both mother and baby.	1 Have students discuss the following characteristics associated with malnutrition: a) quick fatigue; b) poor posture; c) restlessness and irritability; d) frequent and prolonged infection; e) sleep difficulties f) lack of ambition; g) skin problems; and h) lack of appetite. 2 Have an obstetrician speak to the class regarding the importance of good nutrition before and during pregnancy for both mother and baby. 3 Have students research and report on the relative importance of various foods in one's diet. 4 Have students critically evaluate "The Real Talking, Singing, Action," a movie about nutrition.	1 "The Real Talking, Singing, Action," movie about nutrition, available from the Nebraska Department of Health.

Concept	Instructional Objectives	Suggested Activities	Media Resources
14 Malnutrition interacts with disease and other factors to produce reduced life expectancies and poor health for many people.	The student should be able to: 1 Discuss the effect of good nutrition on life expectancies. 2 Discuss the interaction of nutrition with all other factors related to life expectancies. 3 Identify how health needs may not be regulating caloric intake and activity, but choosing balanced meals and improving food processing. 4 Identify various foods of high nutritional value. 5 Plan a balanced meal for his/her age group and activity level.	1 Have the class list its 10 favorite foods and then identify the food they can do without for one year. Mark a + for each food that is high in nutrients. Put an x after the empty calorie foods. 2 Have the class investigate changes in eating habits during the Twentieth Century. 3 Divide the class into small groups and assign each one of the following topics to present to the class as a whole: a) nutrition and mental retardation; b) causes of malnutrition; c) signs of malnutrition; d) pictures and stories of malnutrition; e) rehabilitation of the malnutritioned.	1 "Your Age and Diet," pamphlet from the American Medical Association, 535 N. Dearborn St., Chicago, Ill. 60610. 2 "Something You Didn't Eat," film, 9 minutes.

Concept	Instructional Objectives	Suggested Activities	Media Resources
15 Diet is influenced by psychological factors.	The student should be able to: 1 Identify physical, mental and social reasons for eating. 2 Explain how one's dieting practice is influenced by friends and family. 3 Explain how one's dietary practice is influenced by advertisements. 4 Recognize the common food practices and fads. 5 Evaluate quackery in nutrition.	1 Have the students identify all the reasons for eating. These would include: a) food is necessary to sustain life; b) it is necessary for good health. 2 Have the students consider ways family and friends influence personal food values. 3 Advertisements have a great effect on personal food values. Have the students select a food product and write an advertisement for it using one of the common advertising appeals. 4 Have the students complete a self test on food beliefs. After students complete the test, discuss the results with them.	1 "Reasons for Eating," ITV lesson. (See Appendix A, p. 95.) 2 Ditto master in Appendix B: self test on food beliefs; all answers are false (p. 121).

Concept

16 Adequate nutrition is essential to total well-being.

Instructional Objectives

The student should be able to:

1 Identify proteins, carbohydrates, vitamins, minerals and fats as necessary nutrients for body growth and maintenance.

2 Explain that the basic four food groups provide these nutrients.

3 Identify each of the food groups and the role each plays in diet.

Suggested Activities

1 Present the following information:

Group	Main Role
Milk Group - milk, cheese, ice cream.	Provides proteins, fats, calcium, vitamin D.
Meat Group - meat, fish, beans, nuts, eggs, foul.	Provides proteins, iron and 3 vitamins.
Fruit and Vegetable Group - all fruits and vegetables.	Provides carbohydrates, proteins, iron and 3 vitamins.
Bread and Cereal Group - breads, cereal and macaroni, other baked goods.	Provides carbohydrates, grain, bulk, sugar, added vitamins (C and D) and iron.

2 Ask the students to locate research on vitamin claims and report their findings to the class.

Media Resources

1 "Cooking: Foods for Health," "A Mark of Quality" and "That the Best Will Be Ours," films from the University of Nebraska-Lincoln Instructional Media Center.

Concept

17 Weight is influenced by caloric intake and expenditures.

Instructional Objectives

The student should be able to:

1 Explain that the balance of energy is a determining factor in weight control.

2 Identify three ways energy is used (basic metabolism, muscular movement, taking in and digesting food).

3 Explain that to maintain body weight there must be a balance between the number of calories eaten and the number of calories used.

Suggested Activities

1 Basal metabolism is the minimum amount of energy needed to carry on the internal work of the body. For boys, basal metabolism equals one calorie an hour for each kilogram of body weight. For girls, it equals .9 calories an hour. An approximation of the basal metabolism for a body which weighs 150 pounds is:
   a) Basal metabolism = calories a day x kilograms of body weight.
   b) Calories a day = 1 x 24 = 24.
   c) Kilograms of body weight (one kilogram = 2.2 lbs.) $\frac{150}{2.2} = 68$
   d) Basal metabolism = 24 x 68 = 1,632 calories.

2 One's energy requirement is altered by physical activity. This can also be estimated accordingly:
   a) Light activity - standing or walking - increases basal metabolism by 50 per cent.
   b) Moderate activity - walking or moderate playground activity - increases basal metabolism by 75 per cent.
   c) Heavy activity - active sports or swimming - increases basal metabolism by 100 per cent.
   d) Ten per cent must be added for the energy that is expended by eating and digesting of food. One should also be aware that the energy cost of the acivity is continued through the full recovery period until the basal metabolic rate is again achieved. This may be three to five hours, depending upon duration and intensity of the activity.

Media Resources

1 "Reasons for Eating," ITV lesson. (See Appendix A, p. 95.)

2 "You Can Reduce," pamphlet from the National Livestock and Meat Board, 407 S. Dearborn St., Chicago, Ill. 60605.

3 "Facts About Figures," film, 18 minutes.

Concept	Instructional Objectives	Suggested Activities	Media Resources
18 Regular physical activity and rest is essential for physical and mental health.	The student should be able to: 1 Explain that regular physical activity is necessary to achieve optimal health. 2 Explain how the muscular, respiratory and circulatory systems are all affected by regular physical exercise. 3 Identify and explain the need for rest, relaxation and sleep for physical fitness.	1 The following information on regular exercise is from the President's Council on Physical Fitness: physical activity benefits the body by increasing strength, endurance and coordination. It: a) increases joint flexibility; b) corrects postural defects; c) improves general appearance; and d) reduces fatigue. 2 Following a heart attack, medically prescribed physical activity is usually a part of recovery and rehabilitation. Have the students contact local doctors, the heart association and state and local health departments to collect information concerning physical activity for the heart patient. 3 Ask the students to define and explain the roles of rest, relaxation and sleep in their daily lives. 4 Refer to the physical activity section in this unit.	1 Ditto masters in Appendix B (p. 122): Determining the Carotid Pulse and Determining the Radial Pulse. 2 "Seven Paths to Fitness," pamphlet from the American Medical Association, 535 N. Dearborn St., Chicago, Ill. 60610. 3 "Youth Physical Fitness," a 28-minute film available from the President's Council on Physical Fitness, Washington, D.C. 4 "What Makes Millie Run," a 21-minute film available from Brigham Young Media Resources or UNL Instructional Media Center.

Concepts

19 Excess body weight is recognized as a common health problem.

An understanding of weight control involves knowledge of the structure and function of the digestive system.

Many factors must be considered in weight control.

Instructional Objectives

The student should be able to:

1 Identify the three major weight problems:
   - a) obesity;
   - b) overweight; and
   - c) fluctuating weight.

2 Demonstrate knowledge concerning:
   - a) ideal body weight;
   - b) reliability of height-weight tables;
   - c) body types; and
   - d) percentage of body fat estimated.

3 Identify the important structures of the digestive system and the related functions.

4 Define the important terms related to digestion:
   - a) mastication;
   - b) digestion;
   - c) deglutition; and
   - d) peristalsis.

5 Demonstrate a knowledge of the process and absorption of carbohydrates, fats and protein.

6 Understand the complexity of the problems of weight control.

7 Define, identify and process the various physiological factors in weight control:
   - a) fat cell development;
   - b) appestat;
   - c) fasting;
   - d) type of food eaten;
   - e) how often one eats; and
   - f) regulation of food intake.

8 Explain the relationship between

Suggested Activities

1 Have the class discuss the issues raised in the film, "The Fat Fighters."

2 Have the class discuss how body weight can increase but have less fat.

3 Lecture on the structure and function of the digestive system as it relates to weight control.

4 Have a physican speak on the complexity of weight control.

5 Have the class research and report on the effect of various physical activities on caloric expenditure.

6 Evaluate the effectiveness of certain recreational activities in maintaining body weight.

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caloric intake and expenditure.

9 Demonstrate the importance of diet as a factor in weight control.

10 Demonstrate the role of exercise in weight control.

Media Resources

1 "The Fat Fighters," a film from the University of Nebraska-Lincoln Instructional Media Center.

2 Transparency masters in Appendix B (pp. 123-127) for:
   - a) basal metabolic rate caloric requirements;
   - b) number of fat cells related to activity;
   - c) fasting and 1,000 calories;
   - d) lipostatic regulation of weight; and
   - e) definition of terms.

Concept	Instructional Objectives	Suggested Activities	Media Resources
20 Being physically educated is an important part of total education.	The student should be able to: 1 Explain why physical activity and exercise are important. 2 Discuss the rationale for learning physical skills which are applicable for recreational use for a lifetime. 3 Explain the role of physical education within society.	1 Have each student evaluate his/her own attitude toward physical education using the Wear Attitude survey or some similar instrument. (See appendix.) Discuss the test results with the students. Point out that students will not be graded on their test scores. Ask the students the following: a) Did you expect to have a "good" attitude? b) Did you score as expected? Why or why not? c) Of what significance is your attitude toward physical education with reference to your future participation in physical activity? d) Can anything be done to change your attitude? e) When did you establish your basic attitude toward physical activity? 2 Have the physical educator present the physical fitness data from some previous classes. Discuss the implications of these results. 3 View and discuss either of these films: "Be Fit and Live" or "Alive and Feeling Great."	1 "Be Fit and Live," a film from the Nebraska Department of Health. 2 "Alive and Feeling Great," a film from the National Audio Visual Center (NAC), General Service Administration, Washington, D.C. 20409. ($10 rental) 3 Value Inventory by Corbin, Dowell, Lindsey and Tolson -- Concepts in Physical Education, Wm. C. Brown, Dubuque, Iowa, 1970. 4 Ditto master in Appendix B (pp. 128 and 129): Wear Attitude Inventory.

Concept	Instructional Objectives	Suggested Activities	Media Resource
21 Each individual should choose his/her own exercise and physical activities.	The student should be able to: 1 Discuss reasons that selection of activities should be based on individual needs and interests. 2 Identify the steps necessary to make a decision concerning choice of exercise and physical activites.	1 Present the following information: a) The basis for individual differences. b) The five steps in making decisions about choice of exercise and physical activities: 1) assess current fitness status: 2) examine current interests; 3) acquire knowledge and understanding of values of physical activity; 4) determine those activities that best meet individual needs and interests; and 5) acquire skill and knowledge in the activities selected. 2 Ask the physical educator to administer the state physical fitness test and discuss the outcome with the class. 3 View and discuss the film, "Run Dick, Run Jane." 4 Have students discuss their individual interests and apparent needs for physical activities. Have them compare their needs and interests with those of their parents.	1 "Run Dick, Run Jane," a film from the University of Nebraska-Lincoln Instructional Media Center. 2 "What Makes Millie Run," a 21-minute film available from Brigham Young Media Resources or UNL Instructional Media Center.

Concept	Instructional Objectives	Suggested Activities	Media Resources
22 Many Americans have failed to make intelligent decisions concerning physical activity and exercise.	The student should be able to: 1 Identify the reasons for poor decisions concerning physical activity and exercise. 2 Write a full week's activity plan.	1 Present information from current research and literature about reasons for poor decisions concerning physical activity. 2 Present evidence to support the fact that Americans have failed to make intelligent decisions concerning physical activity: a) failure of American children to pass minimum physical fitness test; b) many Americans are classified as overweight or obese; c) increase in degenerative diseases; d) complaints of "low back pain"; and e) increase in spectators over participants.	1 American Alliance for Health, Physical Education and Recreation – quotes and facts supporting Comprehensive Programs of HPER, Washington, D.C., 1975 (1201 N.W.). 2 "The Framingham Study," American Journal of Internal Medicine, 1971.

Concept	Instructional Objectives	Suggested Activities	Media Resources
23 Physical fitness is only one component of total fitness.	The student should be able to: 1 Identify the components of total fitness. 2 Explain the relationship between the various aspects of total fitness.	1 Present the mind-body-spirit ideal. 2 Define social fitness, emotional fitness, intellectual fitness and physical fitness and discuss the interdependence of each of these categories. 3 Have students write their own definitions of physical fintess. 4 Ask students to read their definitions and then attempt to form a definition that the majority of the class can accept. 5 Have the class discuss their definitions of physical fitness as compared to the following definition by H. H. Clark: "Physical fitness is the ability to carry out daily tasks with vigor and alertness, without undue fatigue, and with ample energy to enjoy leisure time pursuits and to meet unforseen emergencies."	1 "Run Dick, Run Jane," a film from the University of Nebraska-Lincoln Instructional Media Center. 2 Ditto master in Appendix B (p. 130): definition of physical fitness by H. H. Clark. 3 "Fit, Fat, Fad," pamphlet from Sun Life Insurance Co. of Canada, P. O. Box 6075, Montreal 3, Canada.

Concept	Instructional Objectives	Suggested Activities	Media Resources
24 Physical fitness consists of many specific components.	The student should be able to: 1 Identify the components of physical fitness. 2 Explain the relationship between the various components of physical fitness.	1 Have the students discuss the various components of physical fitness. Health Related Components: a) muscular strength; b) flexibility; c) cardio-respiratory endurance; and d) muscular endurance. Motor Components: e) agility; f) power; g) speed; h) balance; i) reaction time; and j) coordination. 2 Present the relative values of the components of physical fitness by age groups, in order of importance. 3 Have the class discuss the factors influencing physical fitness: a) heredity; b) environment; and c) behavior.	1 Transparency master in Appendix B (p. 131): Important Components of Physical Fitness by Age Groups. 2 "Physical Fitness," pamphlet from the American Medical Association, 535 N. Dearborn St., Chicago, Ill. 68610.

Concept	Instructional Objectives	Suggested Activities	Media Resources
25 A number of physical fitness components may be considered health related.	The student should be able to: 1 Identify the health-related components of physical fitness. 2 Explain the rationale for identifying these components as health related. 3 Evaluate each component as a function of age. 4 Demonstrate a knowledge of the healthful benefits of physical activity.	1 Present a lecture on the health-related concepts of physical fitness, stressing the long term effects of exercise. Include effects on: a) muscle tissue; b) connective tissue; and c) cardio-respiratory function. 2 Discuss the relative importance of each health-related component as a function of age (see transparency). 3 Discuss the film, "Coronary Counter Attack," a sequel to "Run Dick, Run Jane."	1 Ditto master in Appendix B (pp. 132 and 133): Benefits of Training. 2 Transparency master in Appendix B (p. 134): Health Related Physical Fitness Components. 3 "Coronary Counter Attack," a film from Brigham Young University Media Marketing W-Stad., Provo, Utah 84602 (21 minutes, color).

Concept	Instructional Objectives	Suggested Activities	Media Resources
26 Physical fitness is improved by physical activity.	The student should be able to: 1 Identify the contributions of physical exercise to healthful living. 2 Identify the basic principles of fitness training. 3 Define terms commonly used in conditioning programs. 4 Evaluate work load by taking exercise and resting pulse rates. 5 Write an exercise program using the basic principles of fitness training.	1 Lecture on the contribution of physical exercise to the "Good Life." 2 Have students review and discuss their notes from the films, "Run Dick, Run Jane" and "Coronary Counter Attack." 3 Invite influential people of the community who are active in a physical fitness program and have them give their personal experiences. 4 Lecture on training principles: a) medical examination; b) overload principle; c) progression; d) "train, don't strain"; e) specificity of training; f) frequency; g) aerobic and anaerobic training; h) importance of warm-up; i) use of exercise heart rate as indicator of work load. 5 Provide students with a test for detecting gains and losses in cardiovascular fitness. 6 Allow students to take resting and exercise heart rates on themselves and on another student. 7 Demonstrate how heart rate may be influenced by emotion. 8 Discuss what other factors may affect resting and exercise heart rates.	1 Any one of a number of text books dealing with scientifc basis of physical fitness.

Concept	Instructional Objectives	Suggested Activities	Media Resources
27 Aerobic exercise has many health related aspects.	The student should be able to: 1 Define aerobic exercise.	1 Present a lecture on: a) aerobic exercise; b) Cooper's point system.	1 "Run Dick, Run Jane," a film from the University of Nebraska-Lincoln Instructional Media Center.
	2 Categorize various physical activities according to their relative value in regard to aerobic fitness.	2 Have students learn to take resting and exercise pulse.	2 "Do You Feel Good?", pamphlet from Channing L. Bete, Greenfield, Mass. 01301.
	3 Demonstrate a knowledge of the benefits of aerobic activities by writing an exercise prescription for himself/herself.	3 Get volunteers to represent "well-conditioned" and "poorly conditioned" subjects and compare resting, exercise and recovery heart rates.	
	4 Demonstrate a knowledge of Cooper's point system used in assessing aerobic fitness and potential contributions of various activities by planning an exercise program for a full week.	4 Have the class discuss the outcome of the above exercise and present the underlying factors involved.	
		5 Have students form a chart of activities and then rank their activities on the basis of the contribution to aerobic fitness.	
		6 Review benefits of cardio-respiratory fitness.	
		7 Discuss the various values of using pulse rate as an indicator of aerobic activities.	
		8 Demonstrate various methods of taking pulse rate.	

Notice to Teachers and Administrators

This unit could be considered controversial in your community. Please keep in mind that this is a teacher's guide of suggested concepts and activities for senior high students. Concept and activity materials in these guidelines are not intended for student use.

Recognizing that philosophical, religious and ethnic differences exist among Nebraska communities, the Department of Education recommends that these guidelines be examined carefully by the health education teacher and discussed with an administrator. If others in your community have an interest, seek their input and support.

These guidelines (and the guidelines for elementary and junior high) have been mailed to you in loose-leaf form. This was done so that you may modify these materials to fit your school and community needs.

The Family

This unit includes courtship, marriage and family relations.

This is an exciting time for most high school students. Through the usual dating process, they begin to experience true concern, compassion and a commitment to another person. However, it can also be a time of questioning, doubt and some confusion.

This material is presented to help the student consider his/her situation in an objective, honest manner.

Concept	Instructional Objectives	Suggested Activities	Media Resources
1 Various factors influence the success or failure of marriage.	The student should be able to: 1 Identify the following as factors which have a direct influence on the success of marriage: a) expectations b) goals c) values d) maturity e) background f) common interests g) religion 2 Explain the possible advantages of pre-marital counseling.	1 If possible invite several married couples to the classroom to discuss this concept. Invite couples who are newly married, couples married 10 years, couples married 25 years.	1 "Are You Ready for Marriage?" and "How Do I Love Thee?", films from the Nebraska Department of Health. 2 "To Be Married," a film from the University of Nebraska-Lincoln Instructional Media Center. 3 Refer to Appendix C (p. 135) for print materials available from the Nebraska Department of Public Institutions.

Concept	Instructional Objectives	Suggested Activities	Media Resources
2 Society recognizes special ceremonies and laws dealing with many of life's activities.	The student should be able to: 1 Explain that marriage is a very personal and a legal relationship. 2 Identify and explain the purpose and role of laws dealing with marriage, birth, death.	1 Invite resource people into the classroom for additional input and insight to this teaching area. 2 Research and report on origin of marriage, birth and death customs. 3 Discuss how infant mortality affects world health. 4 Examine and discuss various types of legal certificates (marriage, birth, death).	1 "Anatomy of a Teenage Engagement" and "This Charming Couple," films from the Nebraska Department of Health. 2 Refer to Appendix C (p. 135) for materials available from the Nebraska Department of Public Institutions.

Concept	Instructional Objectives	Suggested Activities	Media Resources
3 Family structures are of various types.	The student should be able to: 1 Identify various types of family structures. 2 Identify a non-traditional family structure.	1 Ask the students to define "family." List the functions a family has and list the roles the members play. Emphaaize that families come in many sizes, shapes and forms. 2 Discuss the effect of matriarchy and patriarchy on various cultures in which they are significant. 3 Contrast the American family structure with the structure in a kibbutz and other cultures.	1 "Focus On the Family," periodical from F. C. Brown Center for Family Studies.

Concept	Instructional Objectives	Suggested Activities	Media Resources
4 The family has certain functions and purposes as a social institution in current day society. (Procreation, economic education, transmission of culture.)	The student should be able to: 1 Explain that relationships within a family constantly evolve. 2 Identify the role he/she plays in the family. 3 Identify methods of resolving family problems.	1 Conduct a discussion in which the family is treated as a group, a social entity, a cultural pattern, a legal entity, an economic arrangement, a political fact and a biological process. 2 Discuss and role play a family and a constructive method of dealing with problems. Acceptable solutions are usually based on the following: a) identifying the problem; b) allowing each family member an opportunity to state his/her feelings and opinions; and c) giving all feelings and opinions fair and equal consideration. 3 Discuss the role the family plays in the transmission of cultural heritage (customs, language, values, beliefs). Follow this with a foreign exchange student discussing these items of his/her culture.	1 "Who Cares," a film from the Nebraska Department of Health. 2 "How Do Parents and Teens Relate?" and "Four Families," films from the University of Nebraska-Lincoln Instructional Media Center. 3 "A Family Decision," ITV lesson. (See p. 96.)

Concept	Instructional Objectives	Suggested Activities	Media Resources
5 Early childhood education is a family responsibility and parents and other family members play a vital role in the development of children.	The student should be able to: 1 Identify and discuss various family responsibilities.	1 Discuss parental responsibilities of meeting physical, emotional and social needs of children. 2 Have committees develop reports to the class on the principles of care, how homes can supplement school education, and how the physical needs of children are best met. 3 Discuss the stages through which an infant becomes acclimatized to family life.	1 "A Family Decision," ITV lesson. (See p. 96.) 2 "Sexual Values in Society," filmstrips and records available from Guidance Associates. Examines the need for communication and understanding between generations. 3 "What To Tell Your Children About Sex," pamphlet from Child Study Association of America, Meredith, N.Y.

Concept	Instructional Objectives	Suggested Activities	Media Resources
6 The structure of the family can be viewed from population statistics.	The student should be able to: 1 Identify sources to obtain information about family structures. 2 Interpret current family data and identify changes or trends.	1 Have students interview local and/or state members of the Bureau of Statistics to learn of the changes in the percentage of the American population living in families, number of persons per household, number of married couples, number who own homes. 2 Compare trends in marriage rate and size of family. Relate these to national stature, war, peace.	1 "The Population Bomb," pamphlet from Hugh Moore Fund, 51 East 42nd St., New York, N. Y. 10017.

Decisions

This unit includes mental health and the use and misuse of chemical substances.

Good mental health usually includes understanding and liking one's self, understanding and sharing with others and being able to cope with the everyday demands of life. A connection is obvious between one's state of mental health and the decision to use or misuse drugs.

The material in this unit is presented as an effort to help the student become informed, aware of self and able to make critical decisions.

Concept	Instructional Objective	Suggested Activities	Media Resources
1 The sum total of traits and characteristics make each person a unique individual.	The student should be able to: 1 Describe the complexity of human behavior and how personality is a composite of one's total being.	1 Divide the class into committees to explore the influence of heredity, health, environment, religion, interests, education, neighborhood, family, friends, on personality. 2 Assign students to write a paper analyzing their personality strengths and weaknesses. 3 Explore factors making up personality such as: a) physical elements: personal appearance, grooming, biological and physical maturity; b) mental make-up: intelligence -- abstract, concrete, practical; c) emotional patterns; d) social reactions; e) spiritual values.	1 "No Man is an Island," film from the University of Nebraska-Lincoln Instructional Media Center. 2 "Human Heredity," film from E. C. Brown Trust Co., 220 S.W. Alder St.. Portland, Or. 97204

Concept	Instructional Objectives	Suggested Activities	Media Resources
2 Personal values emerge as a result of family influence and other varied experiences.	The student should be able to: 1 Define a value as a personal quality or attribute that is highly prized or esteemed.	1 Arrange a panel discussion on how value systems affect behavior patterns, persistence in completing a task, cheating, promiscuous social activities, respect for feelings of others, making the "right decision."	1 Printed material on values available from your Educational Service Unit.
	2 Identify one's values and how they affect decisions.	2 Differentiate between a factual judgment and a value judgment and help students define their own values.	2 "Reflection of Myself," the Adolescent Experience from Guidance Associates.
	3 Differentiate between a factual statement and a value statement.	3 Define a value judgment as a reaction based on feelings while a factual judgment is based on direct observation and can be proven.	

Concept	Instructional Objectives	Suggested Activities	Media Resources
3 Accepting one's self helps promote mental health. Persons with good mental health respect the many differences they find in people.	The student should be able to: 1 Describe his/her assets and liabilities. 2 Describe how others may see him/her. 3 Describe how he/she makes judgments about people he/she comes in contact with.	1 Study modern values (as owning own home, two cars, business successes). Stress security and productivity rather than accumulation of possessions as possible goals. 2 Discuss prejudice and its effect on the mental health of self and others. 3 Show a film of people living in another culture and discuss how their culture influences their sense of values. 4 Ask each student to write a want ad for a friend. Include all the duties, expectations, assets, qualifications and characteristics of this friend. When completed ask the individual if they would hire that person as a friend. 5 Role play and react to various situations young adults might be confronted with.	1 "Take a Good Look at Yourself," ITV lesson. (See Appendix A, p. 97.) 2 Refer to Appendix C (p. 135) for print materials available from E.S.U.

Concept	Instructional Objectives	Suggested Activities	Media Resources
4 Each individual has sources of stress; some physical illnesses are conditioned by emotional conflicts.	The student should be able to: 1 Identify sources of stress. 2 Explain how individuals react to stress. 3 Demonstrate acceptable methods of dealing with stress. 4 Explain psychological stress and how it produces physiological changes which may lead to chronic disease and disorder.	1 Explain the differences in symptoms of hypochondria and those of a psychosomatic origin. 2 Have a physician speak to the class about ailments with emotional undertones. 3 Read the pamphlet "Stress and Your Health," from Metropolitan Life Insurance Company. 4 Discuss anxiety. How does it interfere with a person's daily performance? Can it work for the good? 5 Identify sources of stress by completing open-ended sentences. For example: a) I am sick and tired of . . . b) I get mad when I see . . . c) I get nervous when . . . 6 Identify ways of dealing with stress such as: a) talking with someone b) physical activity c) some method of relaxation.	1 "Understanding Stresses and Strains," a film from the Nebraska Department of Health. 2 "Stress, What, Why and How," ITV lesson. (See Appendix A, p. 98.) 3 "How To Deal With Your Tension," booklet from the National Institute of Mental Health, 5600 Fishers Lane, Rockville, Maryland 20852.

Concept	Instructional Objectives	Suggested Activities	Media Resources
5 Maturity is the ability to deal with situations of your life in a realistic and effective way appropriate to your age level and a particular situation.	The student should be able to: 1 Relate his/her concepts about maturity. How and when is it acquired? 2 Explain that an individual's decision about interacting with a social force should be based upon information about self, the social force, and its effect upon self and others.	1 Discuss "What is Reality?" 2 Analyze "normalcy," its determinants and its effects. Include discussion of "normal anxiety." 3 Role play various social situations and the decisions one might encounter.	1 "Rules for a Lifetime," ITV lesson. (See Appendix A, p. 99.) 2 "Managing Your Emotions," a film from Coronet Films.

Concept	Instructional Objectives	Suggested Activities	Media Resources
6 Substances assimilated by the body can modify human growth and development.	The student should be able to: 1 Identify numerous assimilated substances (food, plant, chemical synthetics) and list their sources and component parts and possible effects on the body.	1 Discuss whether stock raising and farming practices are beneficial and/or harmful to health (e.g. feeding hormones and antibiotics to livestock to facilitate faster growth; using pesticides and insecticides for larger crops).	1 "Food, Energy and You," a film from Henk Newenhaise or local dairy council.
	2 List the potential benefit or harm to an individual and/or community if local, state and/or federal laws are disobeyed or changed.		2 "It Takes A Lot of Help," a film from Kemper Insurance.
	3 Discuss local, state, national or international health problems associated with specific assimilated substances. The student should list the roles that individuals at appropriate governmental agencies play in the solutions to these problems and explain the effectiveness of each agency.		

Concept	Instructional Objectives	Suggested Activities	Media Resources
7 Chemicals are used and misused for various reasons; to receive maximum benefit from any chemical substance it must be used properly.	The student should be able to: 1 Explain that any drug can be dangerous if improperly used and that nearly all drugs have some side effects and must therefore be taken according to directions. 2 Explain that drugs are used and misused for physical reasons (dieting, sleep, staying awake, controlling pain).	1 Present the following information: A drug is defined as any substance (except food) that alters the normal functioning of the body. This includes soft drinks, tea, coffee, vitamins, antiperspirants, medicines, alcohol, cigarettes and all illegal drugs. 2 Provide the class with summaries of court cases in which an individual or group has broken laws which pertain to assimilated substances at local, state, or federal level. Evaluate the court cases in terms of: a) Range of punishment; b) Potential harm to community for the crime committed (e.g. property damage, loss of life). 3 Research and analyze the Federal Trade Commission's order to the tobacco industry to warn the consumer of health hazards which are involved in the use of tobacco. 4 Survey local public and private agencies to determine the countermeasures which are being taken to reduce drug-related highway accidents.	1 "Drugs and the Nervous System," a film from the Nebraska Department of Health. 2 "Drugs and Middle America," a film from the University of Nebraska-Lincoln Instructional Media Center. 3 "In the Beginning," ITV lesson. (See Appendix A, p. 100.) 4 "The Bottle and the Throttle," a film from the Nebraska Department of Health.

Concept	Instructional Objectives	Suggested Activities	Media Resources
8 The misuse of chemical substances can cause problems for the individual and society.	The student should be able to: 1 Identify drug misuse as a psychological problem. 2 Identify drug misuse as a social problem. 3 Identify drug misuse as a legal problem requiring law enforcement. 4 Identify drug misuse as a medical problem. 5 Identify drug misuse as a public health problem.	1 Drug misuse creates a very complex problem. Ask the students: a) For whom is it more of a problem—society or the individual directly involved? b) Is it more of a psychological or a medical problem for the drug user? c) What should be the role of law enforcement in the drug problem? 2 Present the following information: In addition to being a psychological, social, legal and medical problem, drug misuse can also be viewed as a public health problem. It can be classified as either a chronic or communicable disease according to these definitions: a) Chronic. Drug misuse is long lasting and often leaves a disability or handicap. b) Communicable. Drug use introduces the habit to others and spreads as a process of social contagion.	1 "Chalk Talk on Alcoholism," a film from the University of Nebraska-Lincoln Instructional Media Center or State Division on Alcoholism. 2 "Drugs - Use or Abuse," a film from the Nebraska Department of Health. 3 "Al's Garage," ITV lesson. (See Appendix A, p. 101.)

Decisions

Concept	Instructional Objectives	Suggested Activities	Media Resources
9 People who have developed a chemical dependence often need help in overcoming this dependence.	The student should be able to: 1 Define a chemically dependent person as one whose use of chemicals interferes with his/her everyday life. 2 Define and differentiate between a psychological and a physical dependence. 3 Explain that emotional support from friends and family is beneficial in overcoming a chemical dependence.	1 Have each student write a description of a drug dependent person. This should include a physical, mental, emotional, social, and economic description of the drug user. 2 Alcohol is America's number one drug problem. Ask how many of the students described the teenage alcoholic in their paragraphs in the activity above. If no one did, do so now as a class.	1 "Hotline" and "The Legend of Paulie Green," ITV lessons. (See Appendix A, pp. 102 and 103.) 2 "DWI Phoenix," a film from AAA Foundation for Traffic Safety. Emphasizes community approach to driving while intoxicated and correction through education.

Concept	Instructional Objectives	Suggested Activities	Media Resources
10 Several agencies offer treatment and rehabilitation services to help the drug dependent individual.	The student should be able to: 1 Identify agencies and organizations established to help the chemically dependent individual.	1 Have each student either write or personally contact a person or agency which helps drug dependent persons. This can be a doctor, a member of the clergy, a local welfare agency, state or local health department or Alcoholics Anonymous. 2 Realizing that the family of an alcoholic experiences great suffering, organizations have been established specifically to help family members. These include the Al-Anon Family Groups--there is one group for spouses and another for children of alcoholics. Check the local telephone directory or write the Nebraska Division on Alcoholism, Box 94728, Lincoln, NE 68509 for addresses for these groups. Write them for detailed information concerning their work.	1 "The Legend of Paulie Green," ITV lesson. (See Appendix A, p. 103.) 2 "H + 2," concerning two heroin addicts," a film from Stephen Bosustow Productions, explains rehabilitation center and social pressures and responsibilities. 3 "It Takes A Lot of Help," a film from Kemper Insurance Advertising Department. Illustrates several cities' dynamic interdisciplinary approach to local problems.

Concept	Instructional Objectives	Suggested Activities	Media Resources
11 Mental disorders have many causes and are of varying degrees.	The student should be able to: 1 Define psychoneurosis as a behavior disorder caused by emotional tension. 2 Identify some of the common forms of psychoneurosis (hysteria, unreasonable fears, obsessions). 3 Define psychosis as a very serious disorder in which a person has lost touch with reality. a) Organic psychosis is caused by physical or structural change in the brain because of disease or injury. b) Functional psychosis involves a normal-appearing brain that is not able to function. 1) schizophrenia 2) manic-depression	1 Have half the students research neurosis and the other half, psychosis. Choose one student from each group to report the total findings to the class. These two terms are frequently confused and this will help to clarify them. 2 Everyone gets a little depressed sometimes. Ups and downs are a part of life and most people are able to deal with them and accept the lows when they come. However, the psychotic manic-depressive has no control over his/her ups and downs and is often suicidal when down. Have the students research the manic-depressive and report causes of the disorder and the type of personality prone to this mental disorder.	1 "A World Turned Upside Down," ITV lesson. (See Appendix A, p. 104.) 2 "Anger At Work," film. 3 "Feelings of Hostility," film. 4 "Feelings of Rejection," film.

Concept	Instructional Objective	Suggested Activities	Media Resources
12 Various treatments are prescribed for mental illness.	The student should be able to: 1 Identify the following as the major types of treatment for mental illness: a) individual and/or group therapy; b) chemotherapy; and c) electro-shock therapy.	1 Chemotherapy or drug therapy has been an important advance in the treatment of mental illness. Tranquilizers decrease a patient's fears and enable him/her to think clearly, communicate with others and function appropriately. However, many persons feel that in doing so one is only treating the symptom and not the real problem. In fact, by so treating the symptom, perhaps an even larger problem is created. Have the students research both sides of this question and attempt to come to a conclusion. 2 Have the students contact local psychiatrists or hospital personnel and ask their opinions concerning chemotherapy.	1 "Broken Appointment," film. 2 "Chain of Care," film. 3 "Community Mental Health," film. 4 "Delayed Journey," film.

The Environment

This unit includes environmental health, disease control, consumer health and safety.

The environment is defined as everything outside one's self. It is a great, big world including many things which have a very direct effect on us. This material is offered to help students gather correct information, be aware of all the alternatives and make health-wise decisions.

Concept

1 An appreciation and understanding of current medical practices is aided by a historical study of disease and disease control.

Instructional Objectives

The student should be able to:

1 Trace the historical development of care, prevention and cure of various diseases.

2 Identify improvements in the study and control of disease.

Suggested Activities

1 Have groups research the work done from antiquity to the present to discover and cure specific diseases.

2 Have interested students duplicate some of the experiments done by Redi and Pasteur.

Media Resources

1 "Pathology Tests — Look Into Your Future," pamphlet from Public Affairs Pamphlets, 381 Park Avenue South, New York, N.Y. 12601.

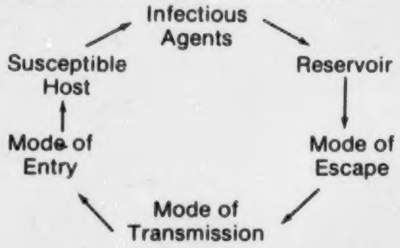
2 "Health Resource Statistics," a book from Public Inquiries Branch, Office of Information, U.S. Public Health Service, Department of H.E.W., Washington, D.C. 20201.

Concept	Instructional Objectives	Suggested Activities	Media Resources
2 Diseases may be classified in various terms which characterize their courses.	The student should be able to: 1 Define and demonstrate knowledge of: a) chronic disease; b) acute disease; c) occupational disease; d) functional disease; e) organic disease; f) communicable disease. 2 Categorize specific diseases into the various classifications.	1 Have students determine the factors which make up each of the disease types. 2 Divide the class into committees; have each select one disease or group of diseases (arthritis, venereal disease, neuromuscular, insect-borne disease) and report on history, cause, source, mode of transmission, incubation period, period of communicability, period of involvement, remission care, control, prevention, research.	1 "Health Protection: The Target of the Bureau of Disease Prevention and Environmental Control," booklet from the Nebraska Department of Health. 2 "Diseases," pamphlet from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20401.

Concept	Instructional Objectives	Suggested Activities	Media Resource
3 Because disease is a disequilibrium, it results whenever there is an uncompensated increase in those factors which promote disease or a decrease in those factors which retard disease.	The student should be able to: 1 Explain the concept of dynamic equilibrium.	1 Discuss the antibody-antigen relationship.	1 Control of Communicable Disease - 11th Edition. Meridith Publishing Co., New York.
	2 Explain the process involved in the formation of antibodies and antigens.	2 Review current theories on natural and acquired immunity and resistance.	

Concept	Instructional Objectives	Suggested Activities	Media Resources
4 Disease control through disease preventing consists of establishing and maintaining a balance of disease promoting/disease retarding factors so that disequilibrium is not established.	The student should be able to: 1 Describe and discuss the facts of identification and acceptance of known prevention and remedial measures which make it possible to control disease. 2 Discuss the methods by which individuals disseminate disease.	1 Have small groups investigate, report and present supporting evidence on specific ideas which individuals might use to prevent or control communicable diseases and chronic diseases. 2 Have students establish the relative effectiveness as a disseminator of disease of each of the following carriers: patient with mild or missed case (ambulatory patients), prodromal patients, convalescents.	1 Preventive Medicine and Public Health - 9th Edition. Meridith Publishing Co., New York.

Concept	Instructional Objectives	Suggested Activities	Media Resource
5 It is society's responsibility to protect its population from disease and to educate its members about disease.	The student will be able to: 1 Discuss the responsibility that he/she has in protecting sociey from disease. 2 Identify the various means available for educating the members of society about disease and its control.	1 Have a pediatrician explain the need for immunization, why immunizations are not given to children before three months of age, why booster shots are given. 2 Visit well-baby clinics. Interview the director concerning philosophy and effectiveness. 3 Evaluate community health standards.	1 "Why Health Education?", a booklet from Public Affairs Pamphlets, 381 Park Avenue South, New York, N.Y. 12010.

Concept	Instructional Objectives	Suggested Activities	Media Resources
6 The environment is an important factor in preventing the spread of communicable diseases.	The student should be able to: 1 Define a communicable disease as a disease that is spread from person to person via various modes of transmissions. 2 Explain that disease-causing organisms are spread via air, water, food, vectors (animals and insects) and soil. 3 Explain that interruption of the mode of transmission is often an effective method of disease prevention.	1 Present the infectious disease cycle:  Infectious Agents Reservoir Mode of Escape Mode of Transmission Mode of Entry Susceptible Host a) Infectious Agents. Bacteria, viruses, fungi, protozoa and rickettsiae. b) Reservoir. Where the agents grow and multiply. People serve as a reservoir for many agents. c) Mode of Escape. Excape may take place during coughing, sneezing or breathing or be expelled in waste material. d) Mode of Transmission. Water, milk, food and air often serve as vehicles of transmission. e) Mode of Entry. In people the natural body openings serve as sites of entry for infectional agents. f) Susceptible host. This is the last step in the infectious cycle; if resistance or immunity is adequate the body will be able to ward off the disease invasion. 2 The development of antibiotics has resulted in something unexpected — drug resistant bacteria. These new bacteria strains may mean that diseases once under control will again reach epidemic proportions. Have the students investigate this phenomena and offer an explanation for the occurence.	1 "A Spreading Problem," ITV lesson. (See Appendix A, p. 105.) 2 Environmental Education for Everyone: Bibliography of Curriculum Materials for Environmental Studies — Washington D.C., National Science Teachers Association.

Concept	Instructional Objectives	Suggested Activities	Media Resource
7 Many chronic diseases are caused by environmental factors.	The student should be able to: 1 Identify a chronic illness as a disease or condition which deviates from the normal and has one or more of the following characteristics: a) the condition is permanent; b) leaves disability; c) requires special rehabilitation; and d) requires a long period of care and supervision. 2 Identify chronic diseases which may be caused by an environmental factor.	1 Present the definition of a chronic disease and have the students list examples of such diseases. These would include the following: cancer, heart disease, diabetes, emphysema, asthma and chronic bronchitis. 2 Present the following information which matches chronic diseases with environmental factors known to be causative agents: a) Cigarette smoke -- lung cancer and heart disease; b) Overexposure to the sun -- skin cancer; c) Polluted air -- lung cancer, emphysema, bronchitis, heart disease, asthma; d) Overexposure to radiation -- leukemia; and e) High cholesterol intake -- heart attack.	1 Building Better Health — ABC Health Series, New York: American Book Company.

Concept	Instructional Objectives	Suggested Activities	Media Resources
8 Environmentalists and scientists are actively engaged in research linking population, land areas and various types of pollution to specific diseases.	The student should be able to: 1 Describe and discuss how medical science, industry, public health and conservation personnel are actively involved in pollution and disease related research.	1 Assign readings, concerning medical research done in this area. (Note: Medical science has established a link between air pollution and bronchial asthma, athroschlerosis, morbidity, respiratory disease mortality and cardio-vascular disease mortality.) 2 Show slides comparing healthy alveolar tissue with that of an individual exposed to pollutants. 3 Have a medical scientist discuss current research in this area. 4 Have students research the work of the World Health Organization.	1 Man and His Environment: An Introduction to Using Environmental Study Areas — American Association for Health, P.E. and Recreation, Washington D.C. 20016. 2 A Selected Bibliography. Conservation Education Association, Danville, Ill. 61832, Interstate Printers and Publishers.

Concept

9 Change in the environment may produce beneficial or detrimental variations and can also change human behavior.

Instructional Objectives

The student should be able to:

1 Identify human-made changes in the environment which are beneficial.

2 Identify such changes which are detrimental.

3 Explain what is being done to correct environmental hazards.

4 Describe how heredity and all environments -- biological, physical, social and cultural -- help mold the many characteristics and behaviors of an individual.

Suggested Activities

1 People are unique. Unlike other animals, they are able to change their natural environment to suit their needs. Because of this, people are able to keep cool in hot weather and warm in cold weather, to prevent disease, to predict natural disasters and to travel to all parts of the world.
However, along with making life easier, more varied and more comfortable, great environmental problems have been created. Have the students select a human-made item such as the automobile or energy shortage. Require that the students identify its benefits and problems and what's being done to correct the problems created by the item.

2 Have interested students research the incidence of crimes of passion as they relate to atmospheric conditions and geographical locations.

Media Resource

1 "The Ascent of Man" and "Clay - Origin of the Species," films from the University of Nebraska-Lincoln Instructional Media Center.

Concept	Instructional Objectives	Suggested Activities	Media Resources
10 The effects of air and water pollutants on health are both direct and indirect.	The student should be able to: 1 Explain that air pollution has been found to be detrimental to health. 2 List the following as physical complaints reported by people who are affected by air pollution: cough, smarting and tearing of eyes, nasal discharge, sore throat, headache, choking, nausea. 3 Identify diseases that have been linked to the air pollution problem (chronic bronchitis, emphysema, lung cancer, cardiovascular disease).	1 Set up an emergency situation such as a flash flood, blizzard or tornado. Discuss the following: a) how the emergency might affect the health of the community; and b) how to maintain reasonable living conditions under such constraints. 2 Have students research and discuss the direct affects of air pollution on man (specific diseases - bronchitis, lung cancer) and the indirect effects (kills plant life, reduces amount of sunlight that reaches earth, reduces amount of oxygen). 3 Discuss direct and indirect effects of water pollution on man (kills food organisms on which certain societies depend, unavailable to industry). 4 Invite a limnologist to speak on methods used to determine purity of streams, rivers, lakes.	1 "Air Pollution - Take a Deep, Deadly Breath," a film from the Nebraska Department of Health. 2 "Ark," a film from the University of Nebraska-Lincoln Instructional Media Center.

Concept

11 Cancer is a serious medical concern.

Instructional Objectives

The student should be able to:

1 Define cancer as an uncontrolled growth of abnormal cells.

2 Define and differentiate between benign and malignant growths.

3 Explain that while the exact cause of cancer is not known certain contributing factors have been identified (air pollution, radiation, sunlight, smoking, chemicals).

4 Identify the usual methods of diagnosis and treatment of cancer.

Suggested Activities

1 Present the following cancer danger signals that are stressed by the American Cancer Society:
a) a sore throat that doesn't heal;
b) hoarseness or cough;
c) a lump or thickening in the breast or elsewhere;
d) indigestion or difficulty in swallowing;
e) change in wart or mole;
f) change in bowel or bladder habits; and
g) unusual bleeding or discharge.

2 Currently medical investigators are trying to identify viruses as a cause of certain types of cancer. For leukemia (cancer of the blood) and Hodgkins's disease (cancer of the lymph nodes), medical scientists do have great hope of discovering viral causes. If these were the causes, there would be a possibility of developing a vaccine against these cancers.
Ask the students to research the latest reports on viruses as a cause of cancer.

Media Resources

1 "Cancer," a film from the Nebraska Department of Health.

2 "The Embattled Cell," a film from the American Cancer Society Nebraska Division.

Concept	Instructional Objectives	Suggested Activities	Media Resources
12 Cardiovascular diseases are a serious medical concern.	The student should be able to: 1 Explain that cardiovascular diseases involve impairment of the heart and blood vessels (arteries and veins). 2 Identify examples of cardiovascular disease (congenital heart disease, rheumatic heart disease, coronary heart disease, strokes and hypertension). 3 Identify and explain how personal health habits can contribute to cardiovascular disease.	1 High blood pressure (hypertension) affects a great number of persons (including many teenagers) and is a serious medical concern. Recently, exposure to high noise levels has been identified as a cause for this condition. Ask the students to identify other factors which are directed related to this condition. *Note:* People who carry antibodies to milk and egg white have a much greater than normal chance of suffering a heart attack; it may give doctors a very effective way of identifying those persons who are most susceptible to heart attacks. 2 Ask the students to identify known factors which can contribute to heart attacks. (These include smoking, a diet high in cholesterol, high blood pressure and lack of exercise.)	1 "I Am Joe's Heart," a film from the University of Nebraska-Lincoln Instructional Media Center. 2 "A Heartfelt Concern," ITV lesson. (See Appendix A, p. 106.)

Concept	Instructional Objectives	Suggested Activities	Media Resource
13 Medical science is constantly improving diagnostic techniques and cures for disease.	The student should be able to: 1 Discuss present and past techniques used in the diagnosis and cure of various diseases. 2 Explain the improvement in the use of diagnostic techniques for various diseases: a) Pap test for cervical cancer; b) TB skin test; c) Urine test for diabetes; d) Radioisotope tracers for diagnosis of internal disorders; e) Full and partial body scans.	1 Research and report on the use of new devices in medical science (cardiograph, electroencephalograph), antibiotics, surgical techniques, post operative care. Compare these with medical science at the turn of the century. 2 Discuss "self cure" techniques (diabetes, allergics, epileptics). 3 Present the following recent medical research and discoveries: a) Scientists are working on development of a synthetic blood substitute. Discuss the pros and cons of this scientific endeavor. b) Chemical abnormalities have been found in schizophrenics. A sugar called rhamnose is often found in the urine of schizophrenics while it is virtually non-existant in that of mentally healthy people. Discuss the benefits of this detection.	1 "Medical Specialists," ITV lesson. (See Appendix A, p. 107.)

Concept	Instructional Objectives	Suggested Activities	Media Resources
14 Self diagnosis and self treatment may endanger health; therefore many health problems are best dealt with by appropriate specialists.	The student should be able to: 1 Explain dangers involved in self treatment. 2 Identify the information that is required to be on over-the-counter drugs and packages and relate this to self diagnosis.	1 Present the dangers of self-treatment and diagnosis: a) diagnosis may be incorrect; b) valuable time is wasted; c) money is spent unnecessarily. 2 Present the following information about medical specialists: a) Pediatrician - specializes in child care; b) Dermatologist - specializes in skin, hair and scalp disorders; c) Obstetrician - specializes in the care of women during pregnancy; d) Orthopedist - specializes in bone disorders; e) Surgeon - specializes in performing operations; and f) Psychiatrist - specializes in mental disorders.	1 "Medical Specialists," ITV lesson. (See Appendix A, p. 107.) 2 "What and When to Buy," ITV lesson. (See Appendix A, p. 108.)

Concept

15 Expenses for medical care are an important part of the family's budget.

Instructional Objectives

The student should be able to:

1 Explain that approximately six per cent of the national annual income is spent on health care.

2 Explain that the health care dollar is spent on hospital costs, physicians, dentists, drugs and health insurance.

3 Explain that the greatest amount of the health care dollar is spent on hospital care.

Suggested Activities

1 The health care dollar is spent approximately in the following manner:

Hospitals	31¢
Physicians	28¢
Drugs	17¢
Dentists	10¢
Health Insurance	8¢
Appliances	4¢
Other	2¢

Have the students represent these figures in graph form (bar, circular, any other usual means).

2 Ask the students, "Who is responsible for your health?" Answers might vary from parents to teachers to doctors. Hopefully, someone will say "I am." Discuss this responsibility as it relates to any of the areas covered in these comprehensive guidelines.

Media Resources

1 "The Health Fraud Racket," film.

2 "Let's Use, Not Abuse Health Insurance," leaflet from the American Medical Association, 535 N. Dearborn St., Chicago, Ill. 60610.

3 "A Consumer's Guide to Health Insurance Plans," booklet from Public Affairs Pamphlets, 381 Park Avenue South, New York, N. Y. 12610.

Concept	Instructional Objectives	Suggested Activities	Media Resources
16 Many factors influence the wise selection of health insurance.	The student should be able to: 1 Identify the primary purpose of health insurance — to provide financial protection. 2 Identify the following types of insurance coverage: a) major-medical health coverage; b) hospital insurance; c) surgical-expense insurance; d) medical insurance; and e) Medicare. 3 Explain that a wise insurance buy means selecting a type of insurance to fit one's needs at a minimum cost.	1 Present the following insurance information: a) Major medical insurance is written with the idea that most people can handle small medical expenses up to $500. However, most people cannot meet expenses that reach into the thousands of dollars. Therefore, this insurance contains a deductible clause (usually $50 - $100) and the insurance company pays all or a percentage of the remainder. A limit of $10,000 is often stipulated. b) Hospital insurance provides financial protection for that part of medical care that costs the most -- hospital costs. c) Surgical expense insurance provides financial coverage for the fees charged by a surgeon. d) Medical insurance covers the physician's charges. Most insurance plans contain one or a variation of these types of insurance. Ask each student to bring a copy of his/her health insurance policy to class and identify and evaluate the insurance plan.	1 "The Health Fraud Racket," film. 2 "Let's Use, Not Abuse Health Insurance," a leaflet from the American Medical Association, 535 N. Dearborn St., Chicago, Ill. 60610. 3 "A Consumer's Guide to Health Insurance Plans," a booklet from Public Affairs Pamphlets, 381 Park Ave. S., New York, N.Y. 10016. 4 "Money Management - Your Health and Recreation Dollar," a booklet from Household Finance Corporation, Prudential Plaza, 130 E. Randolph, Chicago, Ill. 60601.

Concept	Instructional Objectives	Suggested Activities	Media Resources
17 Advertising affects purchasing of health products.	The student should be able to: 1 Identify advertising as a factor which influences purchasing of health products. 2 Identify and describe at least five of the recognized advertising appeals.	1 Present the following description of types of advertising appeals: a) Snob Appeal. Presents the idea that if you use a particular product you will become a member of the elite or the privileged few. b) Testimonial Appeal. Presents well-known personalities to extoll the values and benefits of a particular product. c) Rewards Appeal. Uses stamps, prizes, coupons in an attempt to get the consumer to try a product. d) Humor Appeal. Presents funny skits, songs and jingles to make a product more attractive to the consumer. e) Just Plain Folks Appeal. Stresses the natural, plain and unadorned - a return to nature or to the "good ole days." f) Scientific Evidence Appeal. Uses doctors and scientists (or actors in white coats) to profess the medical or scientific virtues of a product. g) Bandwagon Appeal. Presents the idea that everybody's doing it so don't you be left out. Examples of these advertising appeals can be found in magazines and newspapers, billboards, radio and television. Ask the students to identify examples of each of these or create their own ads illustrating the various advertising appeals.	1 "The Buy Line," a film from Instructional Media Center, University of Nebraska-Lincoln. 2 "What and When to Buy," ITV lesson. (See Appendix A, p. 108.)

APPENDIX A

REASONS FOR EATING

Cross reference: Concept 1:15, page 37.
Concept 1:17, page 39.

Objectives

To list three reasons people follow a variety of eating habits.

To write a personal philosophy concerning eating, food consumption and diet.

Summary

Three senior high girls, including one who is overweight, reveal by dramatic portrayal their philosophies of living, including their relationship to eating and exercise. Each character clearly defines opposing points of view and reveals techniques used to conceal what some consider socially unacceptable views toward diet habits. The overweight girl conceals her habits from her friends and rationalizes her hunger "needs." She also has a point-of-view about sports and exercise that contradicts that of her friends. Situations are shown where the opposing points of view conflict. The viewer is left to decide who has the better philosophy of living and of diet.

A FAMILY DECISION

Cross reference: Concept 2:4, page 58.

Objectives

To describe a workable family decision-making process.

To list environmental factors that influence family decisions.

To propose solutions to family conflict situations.

Summary

Tom and Melanie, two high school students, find themselves suddenly faced with a serious decision about marriage when Melanie's family makes plans to relocate in another state. Conflicts develop between Tom and his parents when marriage plans are announced. Tom's parents had college plans for Tom which they feel will be lost with a marriage of two young people who have no means of financial support. Tom visits with his school counselor to get support for his decision. The conflict affects the relationship between Tom and Melanie--both fantasize the problems they might face after marriage. The drama stops after a review of facts pertinent to the decision for the viewer to finish the story.

TAKE A GOOD LOOK AT YOURSELF

Cross reference: Concept 3:3, page 65.

Objectives

To define personality.

To identify distinct personality types.

To discover self through analysis of personal assets and limitations.

Summary

Several faces of Ann are revealed as a skilled leader assists with group analysis. With the help of group members, Ann describes her personal assets and limitations which are basic to her personality. Through a series of characterizations, we see the "many faces of Ann" by identifying the many roles she plays to protect herself from emotional pain.

A group game is played in which participants assume given roles. During conversation the leader asks group members to identify the roles that participants are playing. This game helps with role identification and analysis of inner and outer roles (masks) of people as they relate and communicate to others.

STRESS . . . WHAT, WHY, AND HOW

Cross reference: Concept 3:4, page 66.

Objectives

To define stress in physiological and emotional terms.

To select from case studies those factors that contribute to stress.

To list methods for coping with stress.

Summary

Following observation of case studies conducive to stress, symptoms, responses, effects, and means for coping with stress are explained. Rationalization, denial of reality, displacement, projection and compensation are five defense mechanisms for stress. Positive responses for coping with stress are identified: talking about the situation with a confidant; rest; work; changing your environment through different activities or by moving temporarily; compromise. Coping with stress is a learned reaction; when all else fails, it is wise to see a doctor or counselor.

RULES FOR A LIFE STYLE

Cross reference: Concept 3:5, page 67.

Objectives

To identify guidelines useful for communicating with other people.

To explain the difference between assertion and aggression.

To list the rules for constructive arguing.

Summary

The central concept of this lesson is to center disagreements on their causes and avoid attacking the personal characteristics of the other person when resolving conflict. Listening, control of emotions (anger) and a willingness to compromise are basic to constructive arguing. The lesson ends with the challenge to role play conflict situations to practice constructive arguing using the techniques demonstrated.

IN THE BEGINNING

Cross reference: Concept 3:7, page 69.

Objectives

In order to make responsible decisions about drinking, students demonstrate:

1 knowledge and understanding of why people drink and don't drink.

2 awareness that they have decisions to make about whether to drink responsibly, irresponsibly, or abstain.

3 awareness of the many outside forces which influrence people's drinking behavior, including parents, peers, religious beliefs, and occupational obligations.

4 ability to decide when to compromise, and how, and when to stand firm in the face of pressures from outside forces to drink and abstain.

Summary

Pete and Liza are engaged to be married. However, a problem arises because Pete's family drinks and Liza's does not. Pete's father is in the catering business and prides himself on his fancy weddings and parties. His business partner and friend, Guido Russo, supplies the liquor. The conflict arises when Guido insists on giving champagne as a wedding gift, to be served at the church reception. Liza's family refuses to allow alcohol. Liza and Pete are caught in the middle. For a time it seems there will be no wedding.

Interwoven with this plot is the story of Tina who wants to go to medical school. Tina's mother is persistently working toward educating Tina to be worldly by teaching her how to drink. Tina is caught in the middle between her loyalties to her mother and her own goals for herself. With the help of the Hotline she finally takes a stand against her mother's efforts to teach her to drink.

Pete and Liza resolve their difficulties with help from their friends at the Hotline. They write their own ceremony and have the wedding performed by their minister at the Hotline.

AL'S GARAGE

Cross reference: Concept 3:8, page 70.

Objectives

In order to make responsible decisions about drinking, students demonstrate:

1 knowledge of the effects of drinking on driving ability and traffic accidents.

2 motivation to drink responsibly or abstain when one is planning to drive.

3 ability to make responsible decisions about riding with an intoxicated or impaired driver and about friends who are considering riding with a drunk or impaired driver.

4 knowledge of the potential legal consequences of being arrested for driving while intoxicated (DWI) and of the chances of being caught.

5 knowledge of the nature of peer pressure to behave irresponsibly and of ways to cope with it.

Summary

Al Schmitz is a gregarious, nice guy in his late twenties. He's a kind of genius when it comes to fixing cars, and he loves to share his knowledge with some of the young car "freaks" in the neighborhood.

At Als' Garage we meet R. J. who is having a running battle with his parents about his car. They know that R. J. has been drinking while driving. A collision with some trash cans leads to R. J.'s being "grounded." Seeking a way to restore his folks' confidence in him, R. J. calls the Hotline. They tell him the details of a local program for problem drivers, the ASAP program, and he voluntarily signs up for it.

Meanwhile, Bill and Curtis, two "regulars" at the body shop, have brought their girlfriends, Barb and Candy, to a party. Things get out of hand as some of the kids are drinking heavily. Bill and Curtis are intoxicated. They insist on driving the girls home. Barb is afraid and calls the Hotline for advice. In the middle of the phone call, she gets a ride for herself and Candy with someone who has not been drinking, but Candy is reluctant to accept it. Unable to say "no" to her boyfriend, she leaves the party with Bill and Curtis. They are arrested on their way home for drunk driving.

HOTLINE

Cross reference: Concept 3:9, page 71.

Objectives

In order to make responsible decisions about drinking, students demonstrate:

1 awareness that there is a body of factual information they should use in making decisions about drinking and not drinking.

2 knowledge of alcohol's physical and behavioral effects.

3 understanding of the difficulty some people have admitting that they have a drinking problem and seeking help for it.

4 understanding of the reasons people help or fail to help others who have problems and the types of assistance that can be provided.

Summary

The Hotline kids, Amy, Cliff, Wendy, Sonya, Mike and friends come in after school every day and on weekends to answer the phone. They are making a valiant effort to keep the establishment going--but it's not easy. They have been receiving calls from irate neighbors who want to see it shut down. One man with an obvious drinking problem keeps calling them. He, too, threatens to stop them. To make matters worse, the city licensing inspector is concerned about their frequent lack of adult supervision.

Their advisor, Paulie Green, a college senior, is absent more often than not. He is a well-meaning guy who is struggling to finish school. The infrequent time he is around the Hotline, he acts strangely.

Finally, after numerous warnings, the licensing inspector gives the kids one week to vacate the Hotline premises--Paulie is needed now more than ever. The kids finally decide to call in Ken Hendricks, a young medical researcher who has befriended the kids, to see if he'll help them, and he agrees. Later the Hotline kids go looking for Paulie and find him in a phone booth taking to Mike --for Paulie is the mysterious caller.

THE LEGEND OF PAULIE GREEN

Cross reference: Concept 3:9, page 71.
Concept 3:10, page 72.

Objectives

In order to make responsible decisions about drinking, students demonstrate:

1 understanding of the differences between responsible and problem drinking;

2 understanding of why people abuse alcohol;

3 knowledge of some of the emotional and behavioral changes people may exhibit as and after they become problem drinkers;

4 knowledge of various forms of treatment and rehabilitation for problem drinkers;

5 knowledge of constructive steps people can take to help a friend or relative who is becoming or has become a problem drinker.

Summary

After several months the Hotline kids see Paulie again, who is re-establishing his life without abusive drinking. He now has a job and is attending college as a part-time student. To try to manage his problems, Paulie is receiving out-patient treatment with a psychologist at a psychiatric institute. He hasn't had a drink in five months. With the use of flashbacks we see the events which led up to Paulie's becoming a problem drinker. He risked losing his financial aid from the college unless he worked as an advisor to the Hotline. His grades began slipping. Paulie was overworked and over-extended, yet he was determined to be self-reliant, and in his mind his admission to himself that he had a problem was unthinkable. Therefore, he was totally incapable of confiding in his friend or the kids at the Hotline.

During the film, we see Karen, the daughter of an alcoholic mother. Miserable over her mother's abusive drinking and her father's unwillingness to recognize the problem, Karen calls the Hotline and is told about Alateen, a group for the children of alcoholics. At the end of the film, she calls the Hotline back to indicate she has attended Alateen meetings and things are better.

At the end of the program, neither Karen's nor Paulie's problems are resolved, but for both there is considerable hope.

A WORLD TURNED UPSIDE DOWN

Cross reference: Concept 3:11, page 73.

Objectives

To describe the primary characteristics of neurosis and psychosis.

To list basic causes of neurosis and psychosis.

To describe the symptoms of neurosis and psychosis.

Summary

Dr. P. Clayton Rivers, clinical psychologist at the University of Nebraska-Lincoln, uses case studies to demonstrate neurotic and psychotic behavior. Dr. Rivers explains symptoms and causes of specific neurotic or psychotic behavior after each case study illustration. The main concept cited by Dr. Rivers is the varying abilities of people to cope with problems on a realistic level (normality) as opposed to exhibiting magnified responses to problems (abnormality).

A SPREADING PROBLEM

Cross reference: Concept 4:6, page 82

Objectives

To describe how communicable diseases can spread.

To identify diseases caused by pathogens.

To describe the characteristics of six disease-causing organisms: bacteria, rickettsiae, viruses, protozoa, helminths, fungi.

To describe passive and active immunity.

To list three communicable disease-prevention procedures.

Summary

The lesson begins with a graphic display of sneezing as a means of spreading the common cold. Using drawings, the "disease cycle" is explained, body defenses are illustrated and several disease-prevention procedures are discussed. A film illustrates the major disease-causing organisms. The major concept is that the disease cycle must be broken -- preferably by preventive measures rather than cures -- if communicable diseases are to be controlled.

A HEARTFELT CONCERN

Cross reference: Concept 4:12, page 88.

Objectives

To identify the factors that promote good cardiovascular health.

To identify common circulatory disorders and possible causes.

Summary

"A Heartfelt Concern" is a straight-forward discussion of the circulatory system, its care and disorders, and causes of cardiovascular failure. The factual discussion uses charts and special film to explain several diseases: atherosclerosis, coronary thrombosis, cerebral thrombosis, hypertension, varicose veins, thrombophlebitis.

MEDICAL SPECIALISTS

Cross reference: Concept 4:13, page 89.
Concept 4:14, page 90.

Objectives

To list five career opportunities in the medical field.

To describe the training and on-the-job skills needed for five career opportunities in the medical field.

Summary

This lesson uses a "you are there" approach to show students actual medical happenings as several specialists in medicine perform their regular duties. Each health care specialist speaks briefly about why he chose his line of work, what training he took to prepare for work, and what job satisfactions he experiences. Medical specialists included are: emergency medical technician, operating room technician, hospital administrator, medical technologist, social worker.

WHAT AND WHEN TO BUY

Cross reference: Concept 4:17, page 93.
Concept 4:14, page 90.

Objectives

To describe the influence of advertising on the purchasing of health care products.

To identify when self medication is preferred over visitation to a doctor.

To identify disease symptoms that require a doctor's care and diagnosis.

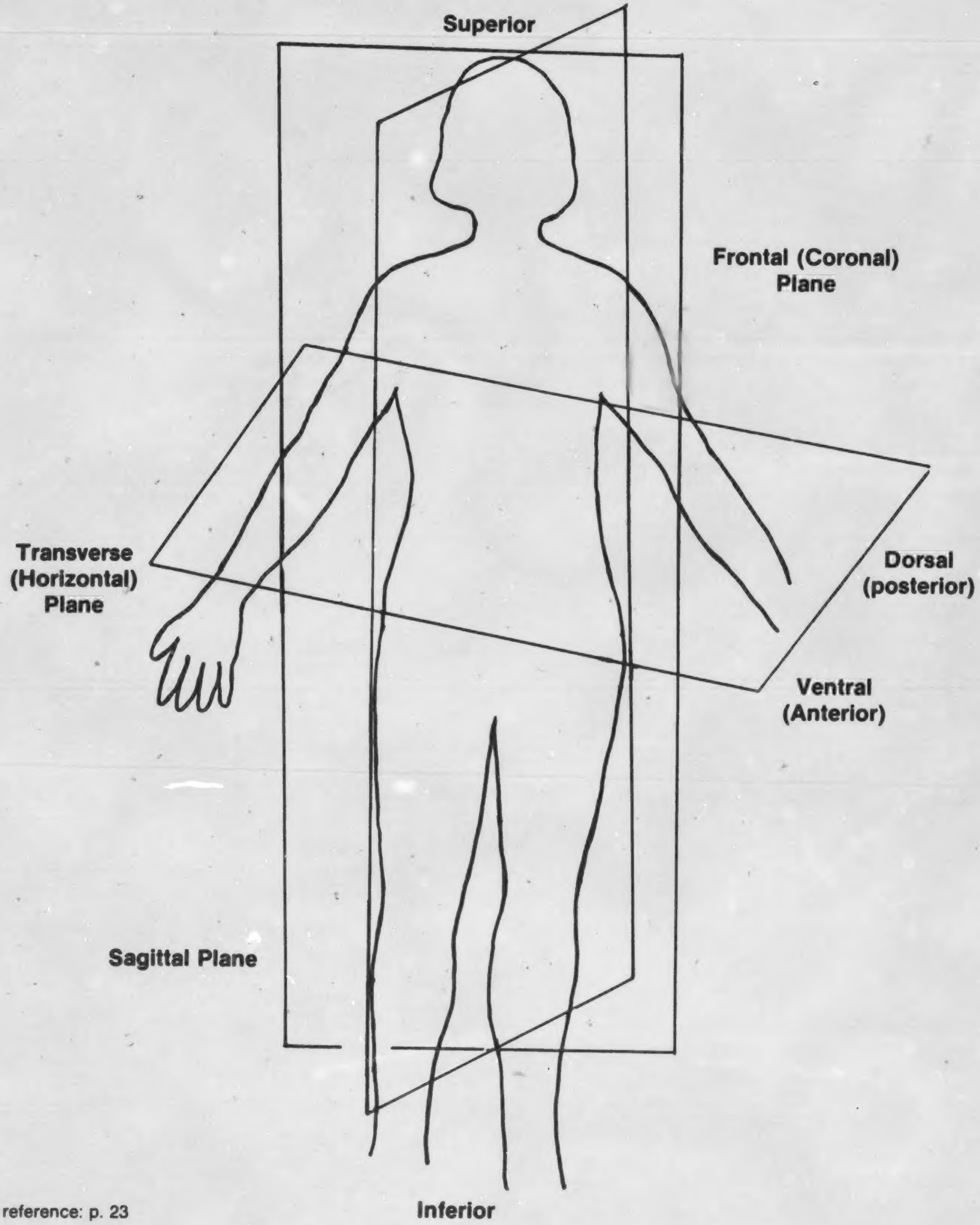
To identify dangers inherent in self medication.

To develop the skill of reading labels of over-the-counter drugs to interpret ingredients, warnings and wise buying purchases.

Summary

Vignettes punctuated by narrative dramatize prevalent attitudes toward the use of over-the-counter drugs. Historically, myth, superstition, religion and lack of knowledge are shown as basic to attitudes toward self medication. The lesson attempts to answer the question: are over-the-counter health products useful? Guidelines for label reading, taking self-prescribed drugs, competitive sales of health products, and disease symptoms warranting a doctor's care are discussed. The usefulness of consumer reports and Food and Drug Administration reports is highlighted.

Body Planes and Directions



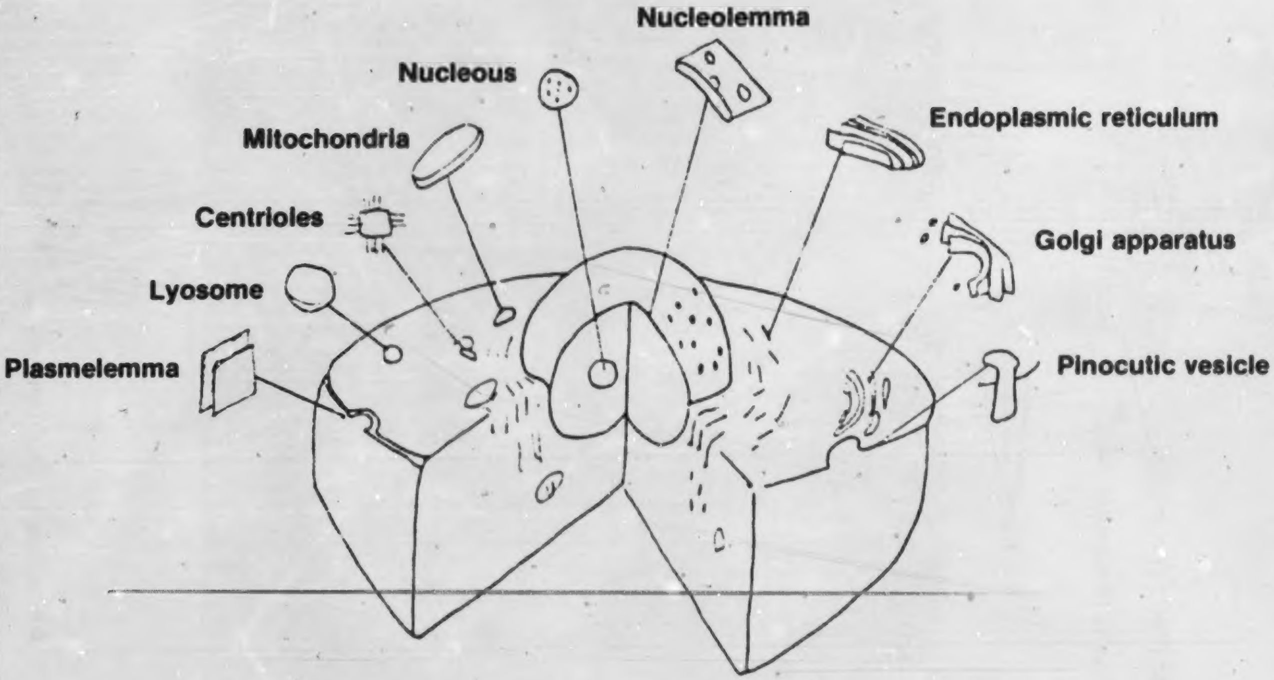
cross reference: p. 23

Directional Terms Describing the Body

LATERAL --	Toward the outside, away from the midline of the body.
	The ears are lateral to the head.
MEDIAL --	Toward the midline of the body.
	The inner surfaces of the legs and arms are medial surfaces.
PROXIMAL --	Toward the body trunk, nearest the origin of a structure.
	The upper arm is the proximal portion of the arm.
DISTAL --	Away from the body trunk.
	The hand is the distal portion of the arm.
CRANIAL --	Near the head.
CAUDAL --	Near the tail region of the body.

Cross reference: p. 23.

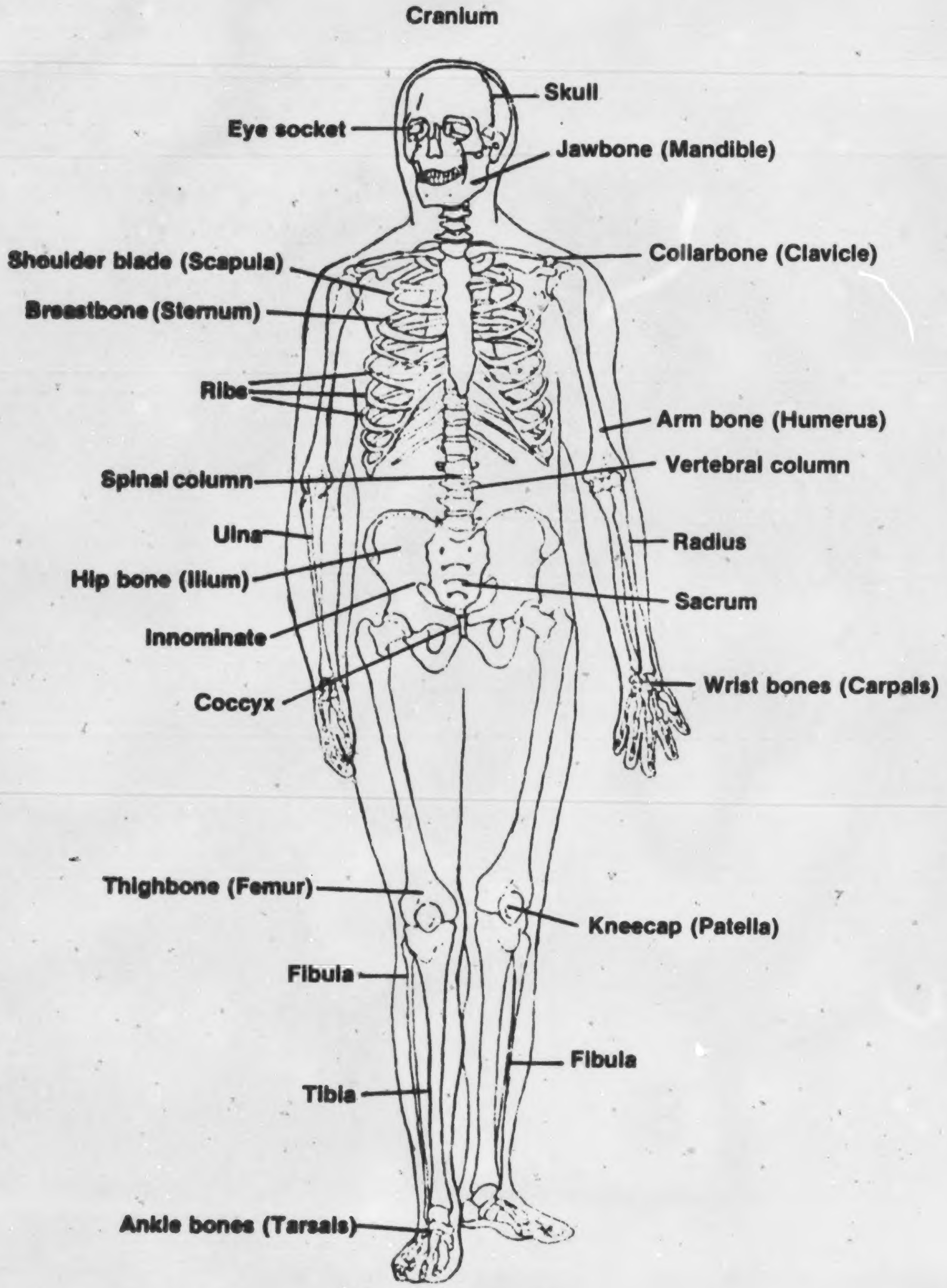
Cell Structure



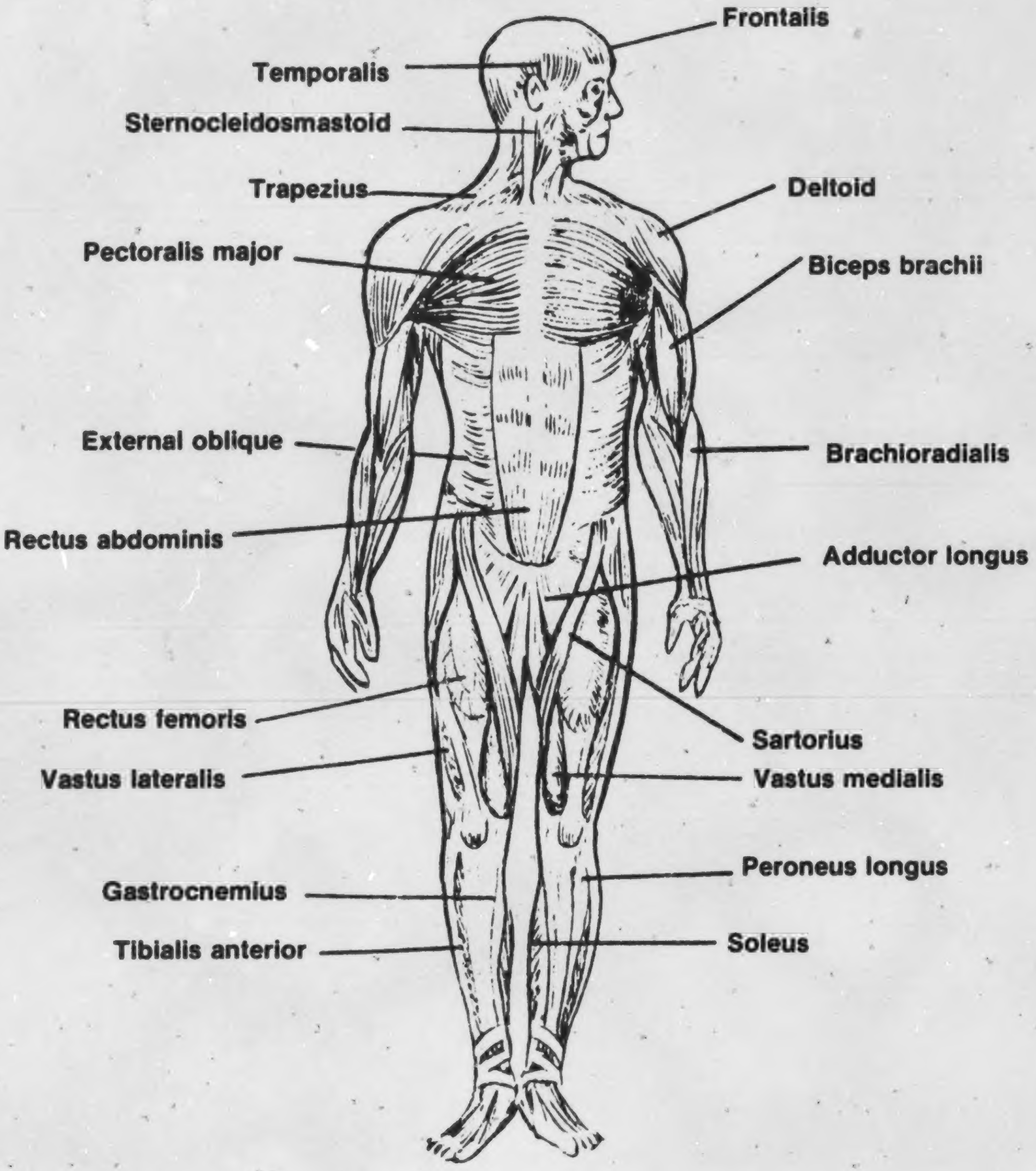
Enlargements of various organelles are shown around the central figure.

cross reference: p. 24

Skeleton

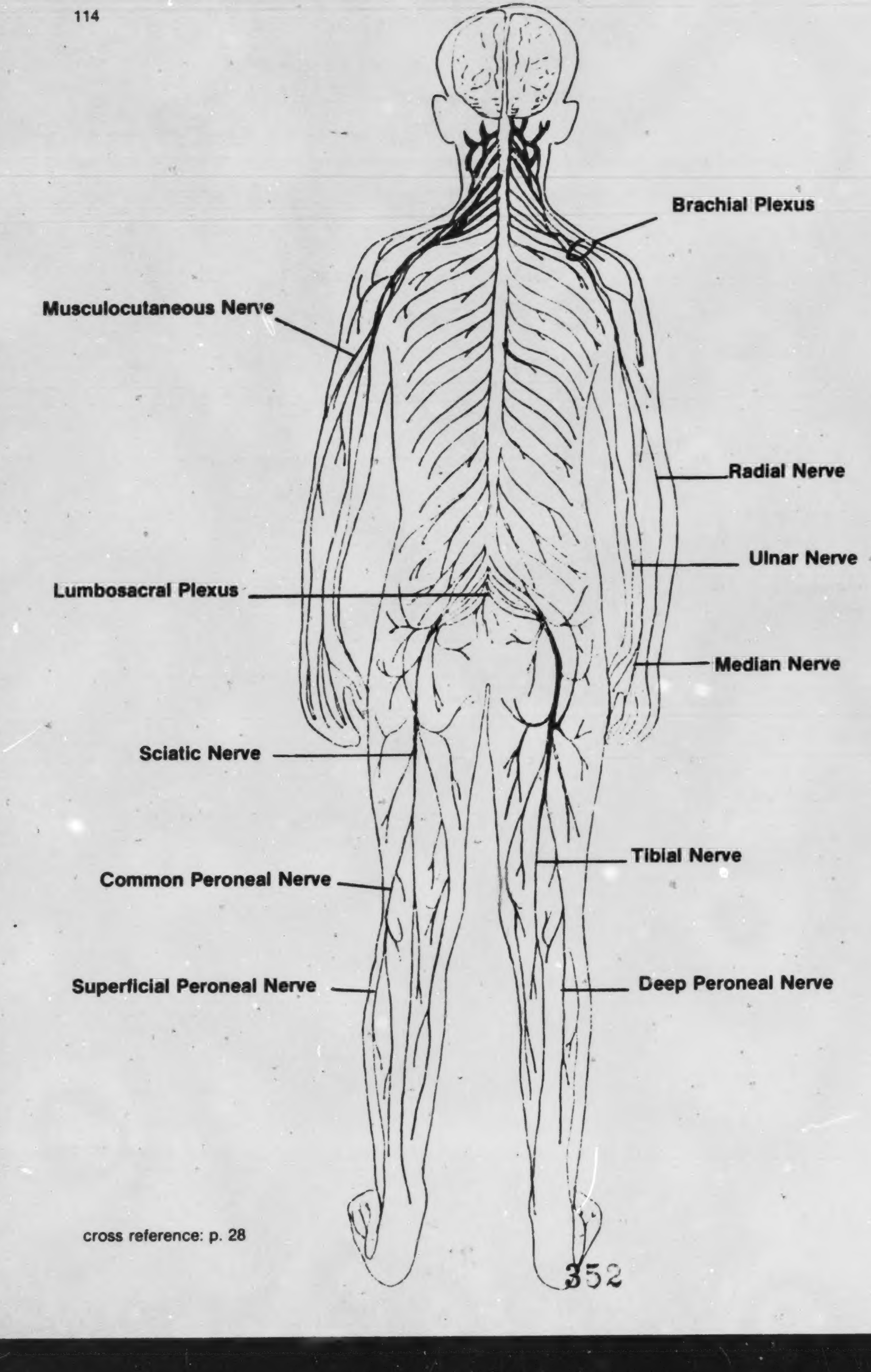

Cranium
Skull
Eye socket
Jawbone (Mandible)
Shoulder blade (Scapula)
Collarbone (Clavicle)
Breastbone (Sternum)
Ribs
Arm bone (Humerus)
Spinal column
Vertebral column
Ulna
Radius
Hip bone (Ilium)
Sacrum
Innominate
Wrist bones (Carpals)
Coccyx
Thighbone (Femur)
Kneecap (Patella)
Fibula
Fibula
Tibia
Ankle bones (Tarsals)

Muscular System



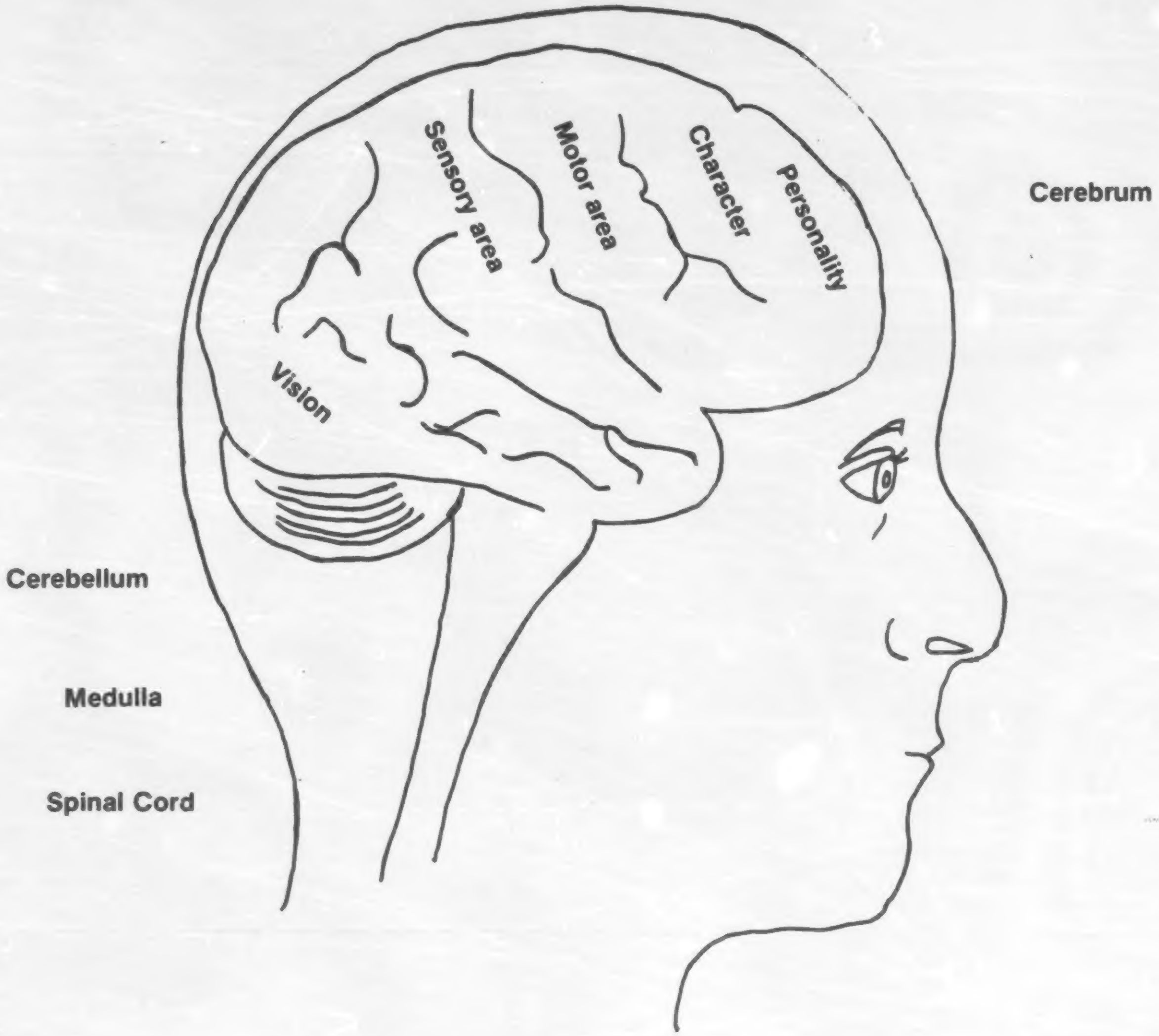
cross reference: p. 27

Nervous System



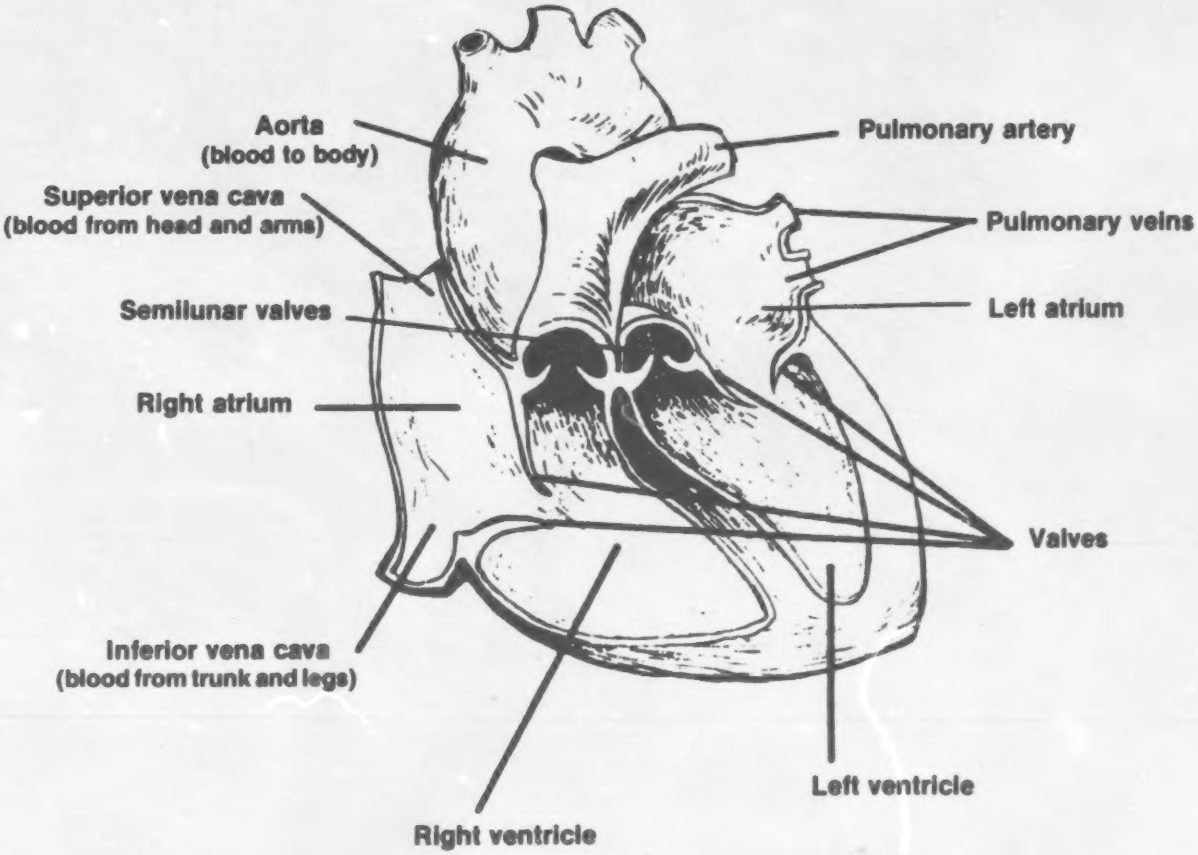
cross reference: p. 28

Primary and Sensory Motor Areas of the Human Brain



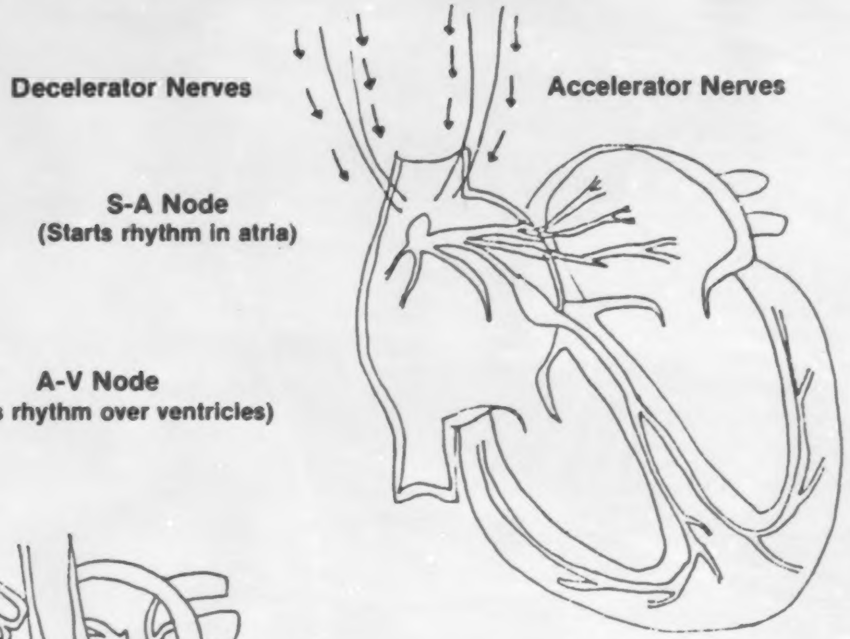
cross reference: p. 28

Heart

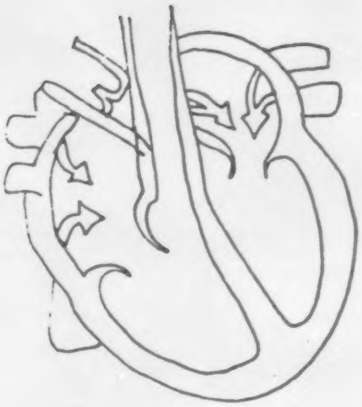


cross reference p. 29

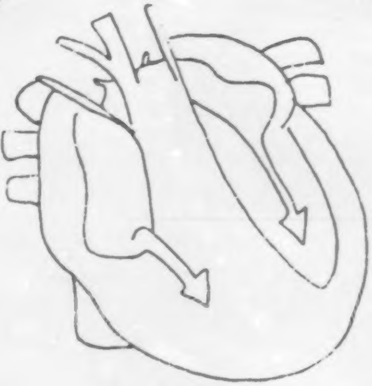
Heart Pumping Cycle



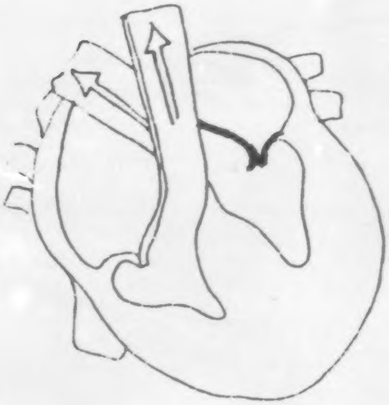
The Heart's Pumping Cycle



1 Blood fills both atria, some blood flows into ventricles — diastole phase



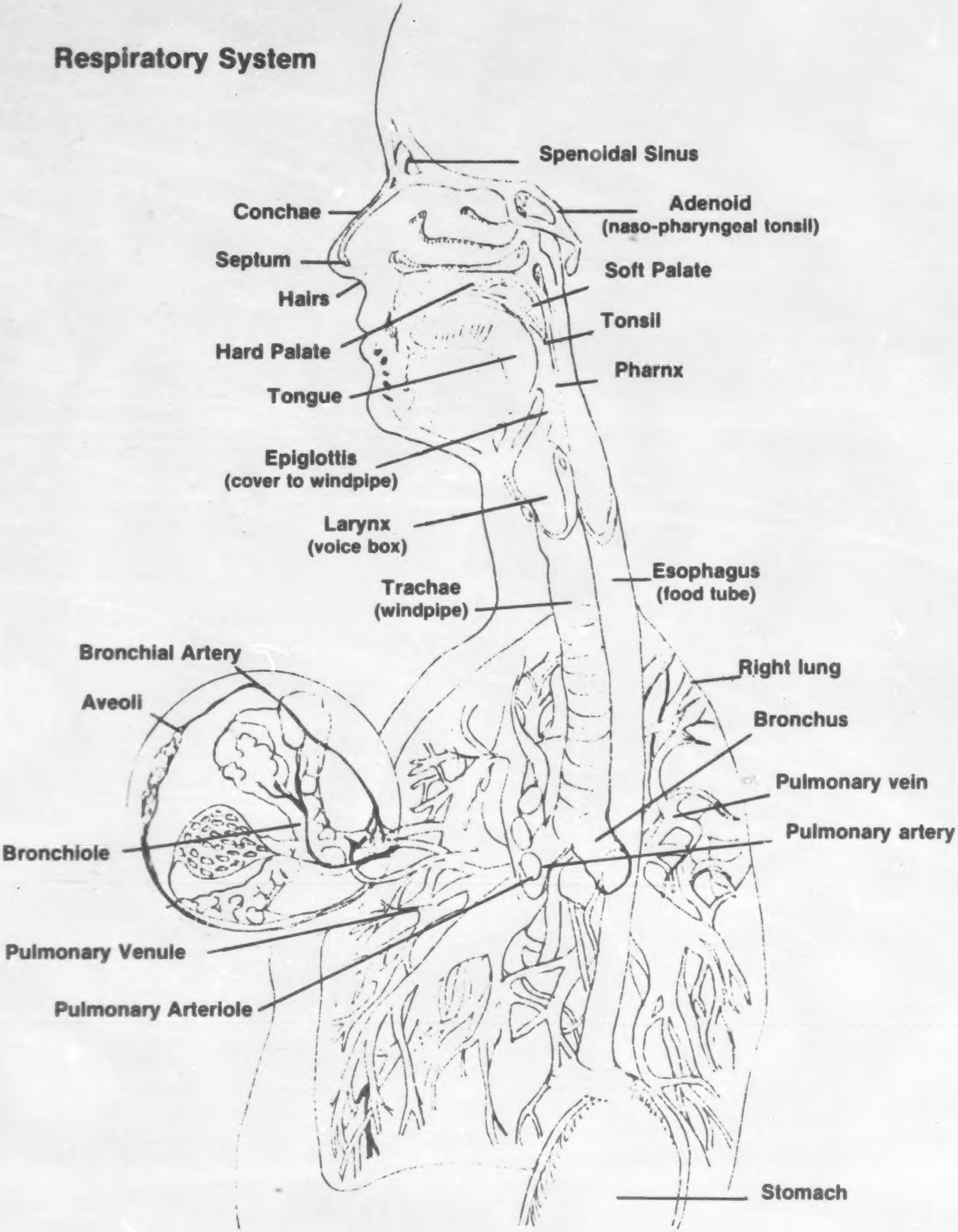
2 Atria contract, squeezing blood into ventricles



3 Ventricles contract, squeezing blood into aorta and pulmonary arteries — systole phase

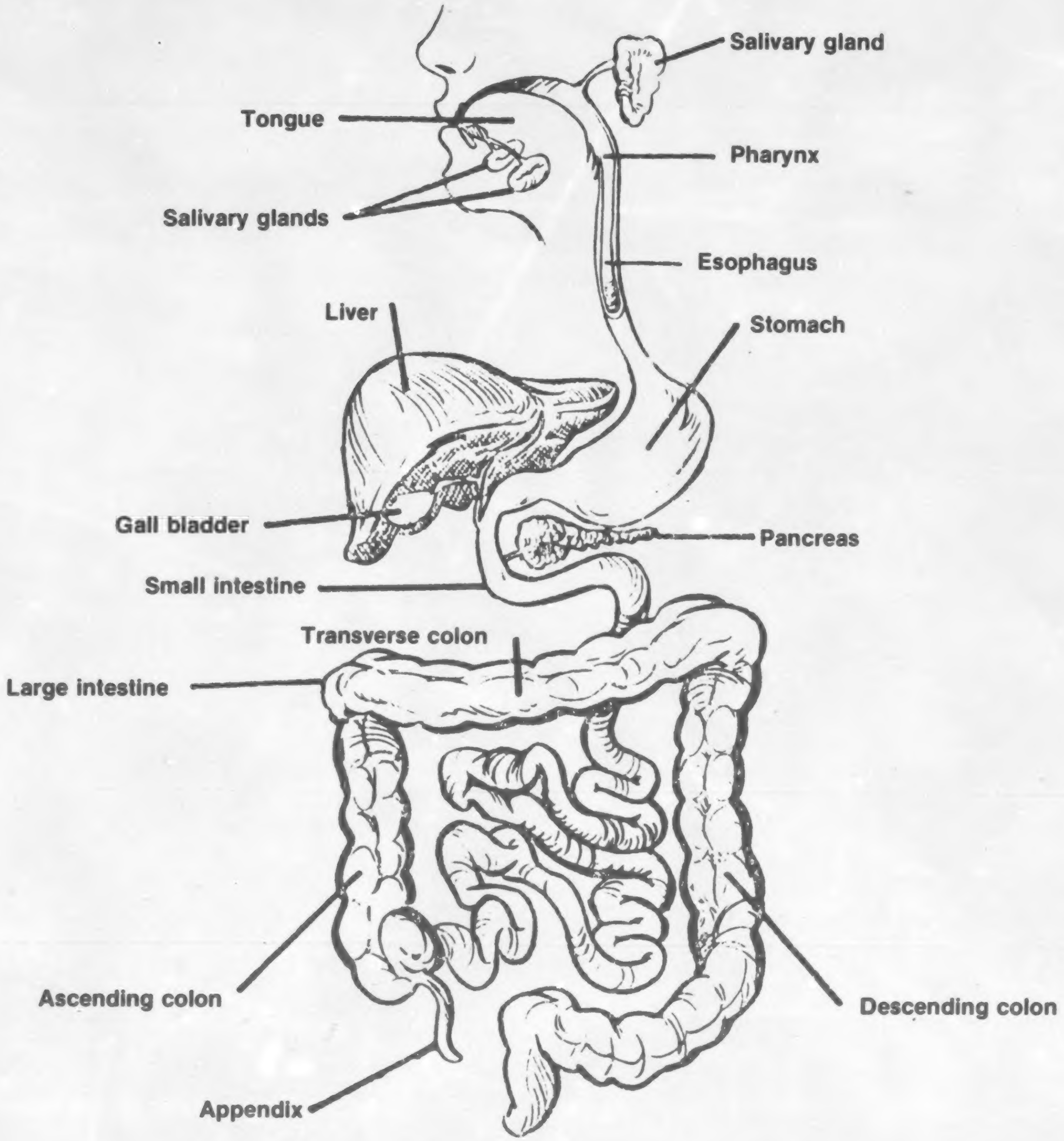
cross reference: p. 29

Respiratory System



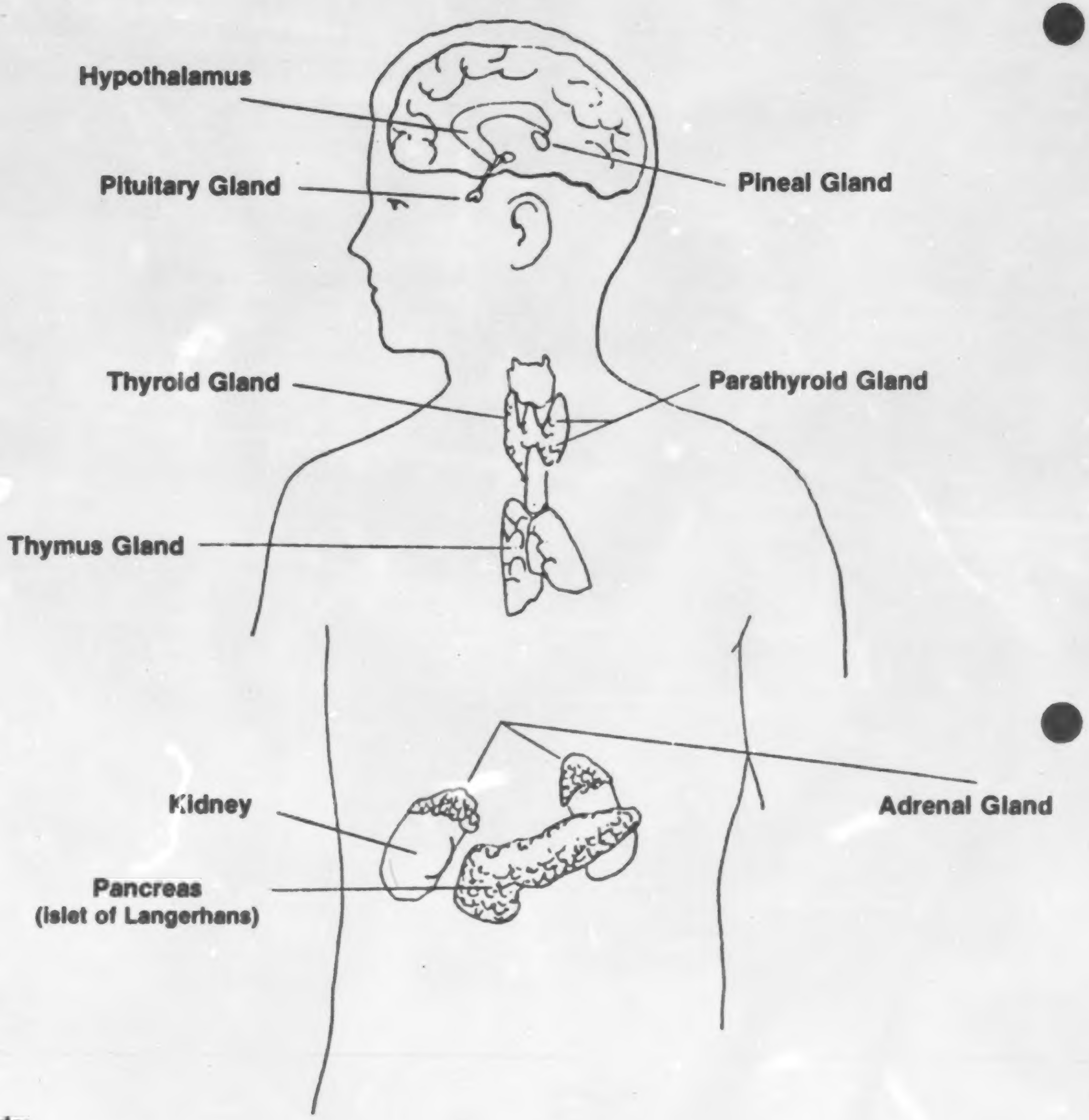
cross reference: p. 30

Digestive System



cross reference: p. 31

Endocrine System



Gonads:
Male - Testes
Female - Ovaries

cross reference: p. 32

Self-Test on Food Beliefs

On a separate piece of paper list the numbers of the following statements which you consider to be false.

1. Raw eggs are more digestible than cooked eggs.
2. One should starve a fever and feed a cold.
3. Prunes and figs cure constipation.
4. A person with "tired blood" needs vitamin pills.
5. Cucumbers are cooling foods.
6. Meats build muscle tissue.
7. Celery is a good nerve tonic.
8. Fish is a brain food.
9. A raw onion taken before going to bed is a good remedy for insomnia.
10. Ripe bananas are indigestible.
11. Toasting bread reduces its caloric content.
12. Milk is the one perfect food.
13. Most diseases are caused by improper diet.
14. Gelatin is a complete protein.
15. Alfalfa is a "wonder food" which deserves more recognition than it has received for its nutritional values.
16. Brown eggs are more nutritious than white.
17. Aluminum cooking utensils contaminate food and may possibly cause cancer.
18. A craving for a certain food is an indication that the body needs that food.
19. As many foods as possible should be eaten raw because cooking destroys nutritive value.
20. Vegetable juices are better than whole vegetables in promoting health.
21. Lobster and ice cream should never be eaten together.
22. Standing for 15 minutes after a meal helps digestion.
23. A diet without meat causes anemia.
24. A good approach to reducing is to eliminate fat from the diet.
25. Drinking water with meals is bad for the digestion.

Cross reference: p. 37

Determining the Carotid Pulse

When taking the carotid pulse, instruct the examiner to use the three middle fingers to palpate the pulse and not the thumb since a clear, steady pulse is present in this digit.

The pulse may be taken on either side of the subject's neck beside the larynx. Using the three middle fingers, apply slight pressure by pressing inwardly and toward the back gradually until the carotid pulse is picked up. It should be pointed out to the examiners (students) and assistants that heavy pressure should be avoided not only because it is uncomfortable for the subject, but because there is a slight chance of erasing or destroying the carotid pulse with unnecessary pressure.

Count the carotid pulse for 15 seconds. When two consecutive counts are within one beat of each other, multiply the last 15-second count by four and record this as the pulse rate per minute. Other adjusted pulse rate determinations may be used in which frequency is counted for a specified number of seconds and is converted to a one minute value, e.g., frequency 20 seconds x 3 or 30 seconds x 2.

Practice may be required before any accuracy can be achieved in counting pulse rate. It is necessary that near total quietness be demanded of the laboratory class and complete concentration on the examiner's part.

Determining the Radial Pulse

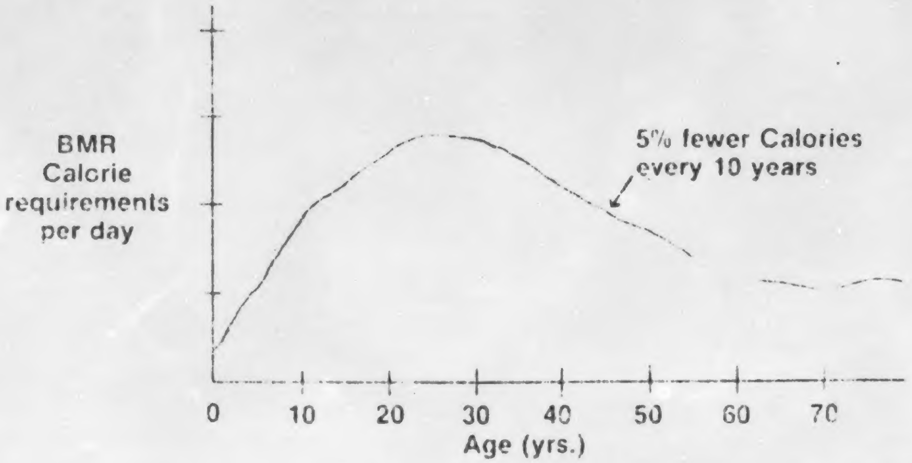
When taking the radial pulse, instruct the examiner to use the three middle fingers to palpate the pulse and not the thumb since a clear, steady pulse is present in this digit.

The pulse may be taken with either arm. Instruct the subject to hold his forearm with the hand palm up. The pulse can be felt over the radial artery that passes over the radius bone at the base of the thumb. The radial artery is found between a large tendon and the bony prominence which is located on the lateral side of the wrist. Point out that too much pressure may blot out the pulse.

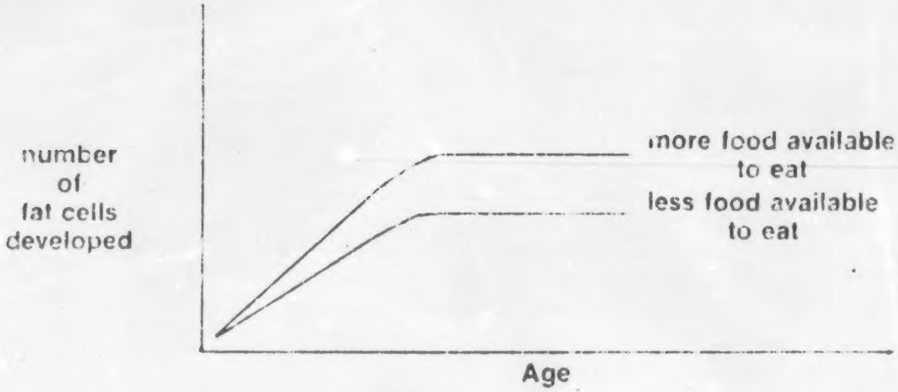
Count the radial pulse for 15 seconds. When two consecutive counts are within one beat of each other, multiply the last 15-second count by four and record this as the pulse rate per minute. Other adjusted pulse rate determinations may be used in which frequency is counted for a specified number of seconds and is converted to a one-minute value, e.g., frequency 20 seconds x 3 or 30 seconds x 2.

Practice may be required before any accuracy can be achieved in counting pulse rate. It is necessary to demand total quietness in the laboratory during this procedure and complete concentration should be demanded from the examiner.

Cross reference: p. 40



BMR as influenced by age

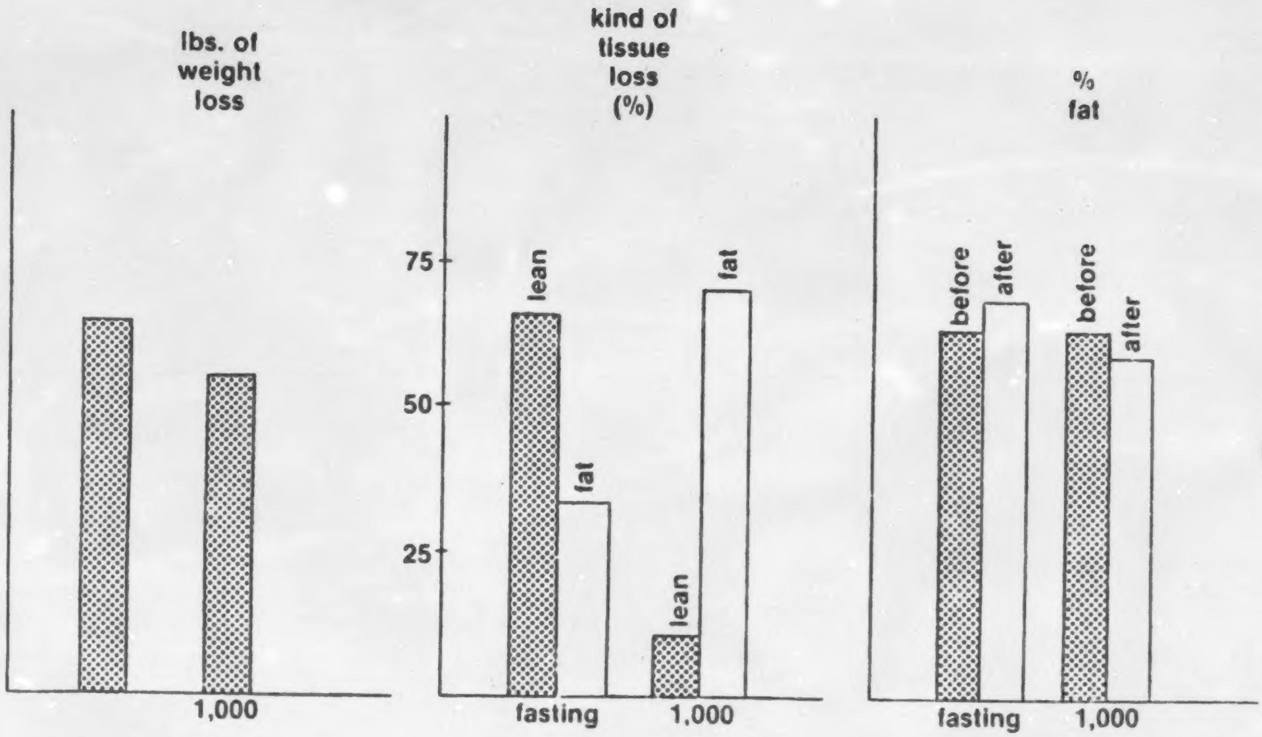


Childhood eating habits and fat cell development.

Comparison of Calorie Values of Various Activities

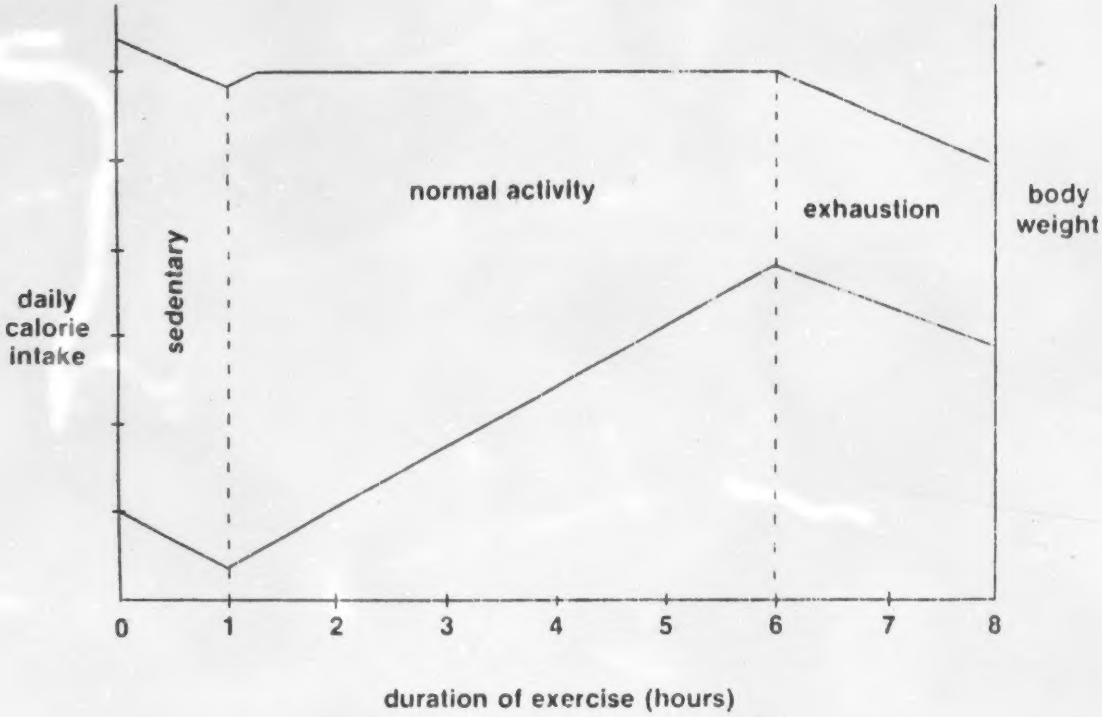
Activity	Calorie Cost/Hour
Golf	223
Archery	168
Bowling	190
Volleyball	210
Calisthenics	330
Cycling	401
Jogging	700
Swimming	530
Walking	334

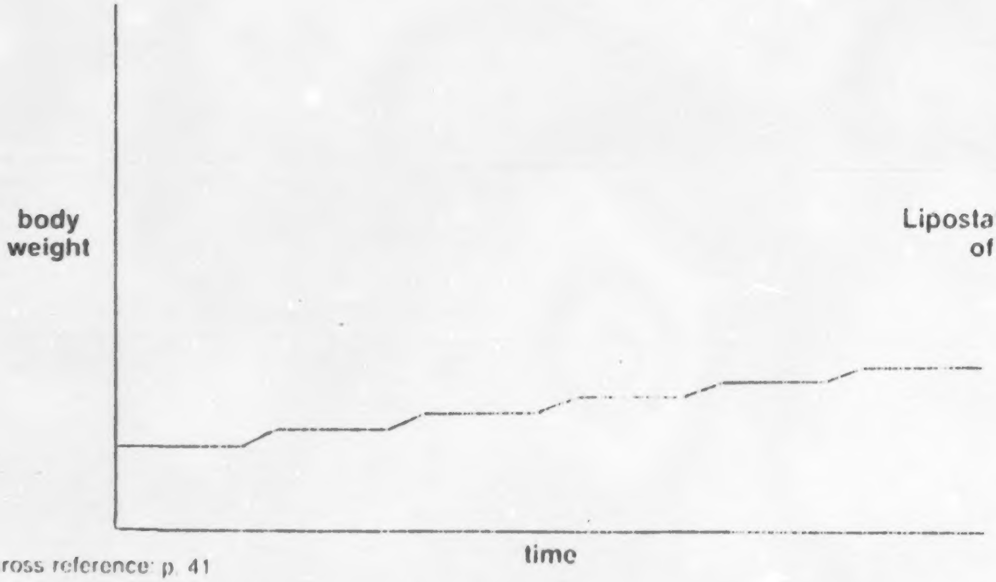
cross reference: p. 41



Comparison of fasting and 1,000 Calorie intake and their influence on weight loss.

cross reference: p. 41





Lipostatic regulation of weight.

cross reference: p. 41

Definition of Terms

Aerobic: With oxygen.

Agility: The capacity to change direction of the body quickly and effectively.

Anaerobic: Without oxygen.

Atherosclerosis: A lesion of large and medium sized arteries. Deposits of lipid material and cholesterol in the intima (innermost coat) of the artery.

Balance: A kind of coordination involving vision, reflexes and the skeletal muscular system which provides the maintenance of equilibrium.

Cardiac Output: The amount of blood pumped out of the heart in one minute.

Cardiorespiratory: Pertaining to heart and lungs.

Cardiovascular: Pertaining to the heart and blood vessels.

Cardio-Vascular Endurance: The ability of the body to persist in strenuous tasks over a long period of time.

Coordination: The ability to adjust the senses with the muscles so as to produce accurate, smooth and harmonious body movement.

Ectomorphy: A type of body build which is predominantly ectoderm tissue. The body type is characterized by linearity and fragility and little subcutaneous fat.

Endomorphy: A type of body build in which tissues derived from the endoderm predominate. The body type is characterized by a preponderance of soft roundness, excess fat, large trunk and thighs.

Flexibility: The functional capacity of a joint to move through a normal range of motion. The muscular system is also involved.

Hypertrophy: The enlargement or over growth of an organ or tissue.

Lactic Acid: One of the end products of muscle metabolism. Produced during muscular contraction especially in the absence of oxygen.

Mesomorphy: A type of body build in which tissues derived from the mesoderm predominate. This body type is the triangular shaped muscle man.

Minute Volume: The volume of air exchanged per minute.

Obesity: The increase of body weight beyond the normal limits of the particular body type, as a result of excess fat.

Power: Power is sometimes confused with strength; however, speed of contraction is the basic ingredient which, when combined with strength, provides an explosive type of movement. Exmaples of this movement are: leaping, jumping, or throwing a ball.

Pulmonary Ventilation: Air taken in and out of the lungs.

Cross reference: p. 41

Reaction Time: The time required to respond or initiate a movement as a result of a given stimulus.

Somatotype: A particular type of body build.

Speed: The ability to move one's total body from one point to another. Speed is usually measured in terms of at least a 50 yard distance.

Strength: The capacity to select muscle groups to contract in a localized muscular effort.

Stress: In this text, high anxiety, high mental or situational pressures. Also physical stress refers to putting a load on the body physically so that it must work harder.

Stroke Volume: The amount of blood pumped by the heart with each contraction (beat).

Subcutaneous Fat: The layer of fat under the skin which can be pinched up and measured.

Thrombosis: A clot in a blood vessel.

Cross reference: p. 41

Wear Physical Education Attitude Scale

Directions: **Please read carefully!** Below you will find some statements about physical education. We would like to know how you feel about each statement. You are asked to consider physical education ONLY from the standpoint of its place as an activity course taught during a regular class period. No reference is intended in any statement to interscholastic or intramural athletics. There are no right or wrong answers. Read each statement carefully; opposite the statement place an "x" on the line which is under the word which best expresses your feeling about the statement. If you **Agree**, place an "x" under "agree." If you **Disagree**, put the "x" under "disagree." **Be sure to answer every statement.**

Agree **Disagree**

____ ____ 1 If for any reason a few subjects have to be dropped from the school program, physical education should be one of the subjects dropped.

____ ____ 2 Physical education activities provide no opportunities for learning to control the emotions.

____ ____ 3 Physical education is one of the more important subjects in helping to establish and maintain desirable social standards.

____ ____ 4 Vigorous physical activity works off harmful emotional tensions.

____ ____ 5 I would take physical education only if it were required.

____ ____ 6 Participation in physical education makes no contribution to the development of poise.

____ ____ 7 Because physical skills loom large in importance in youth, it is essential that a person be helped to acquire and improve such skills.

____ ____ 8 Calisthenics taken regularly are good for one's general health.

____ ____ 9 Skill in active games or sports is not necessary for leading the fullest kind of life.

____ ____ 10 Physical education does more harm physically than it does good.

____ ____ 11 Associating with others in some physical education activity is fun.

____ ____ 12 Physical education classes provide situations for the formation of attitudes which will make one a better citizen.

____ ____ 13 Physical education situations are among the poorest for making friends.

____ ____ 14 There is not enough value coming from physical education to justify the time consumed.

____ ____ 15 Physical education skills make worthwhile contributions to the enrichment of living.

____ ____ 16 People get all the physical exercise they need in just taking care of their daily work.

____ ____ 17 All who are physically able will profit from an hour of physical education each day.

____ ____ 18 Physical education makes a valuable contribution toward building up an adequate reserve of strength and endurance for everyday living.

____ ____ 19 Physical education tears down sociability by encouraging people to attempt to surpass each other in many of the activities.

____ ____ 20 Participation in physical education activities makes for a more wholesome outlook on life.

____ ____ 21 Physical education adds nothing to the improvement of social behavior.

____ ____ 22 Physical education class activities will help to relieve and relax physical tensions.

____ ____ 23 Participation in physical education activities helps a person to maintain a healthful emotional life.

____ ____ 24 Physical education is one of the more important subjects in the school program.

____ ____ 25 There is little value in physical education as far as physical well-being is concerned.

____ ____ 26 Physical education should be included in the program of every school.

____ ____ 27 Skills learned in a physical education class do not benefit a person.

____ ____ 28 Physical education provides situations for developing desirable character qualities.

____ ____ 29 Physical education makes for more enjoyable living.

____ ____ 30 Physical education has no place in modern education.

____ ____ 31 Physical education classes contribute to the general educational goals of social adjustment, cooperative attitudes, emotional control.

Cross reference: p. 42.

FITNESS

"Physical fitness is the ability to carry out daily tasks with vigor and alertness, without undue fatigue, and with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies."

Harrison H. Clark

Cross reference: p. 45

Important Components of Physical Fitness by Age Groups

	Pre-Puberty	Adolescence	Young Adult	Older Adult (25 and over)
1	Motor Fitness	Motor Fitness	PWC	PWC*
2	PWC	PWC	Body Weight	Body Weight
3		Body Weight	Relaxation	Flexibility
4			Flexibility	Relaxation

*PWC = Physical Working Capacity

cross reference: p. 46

Benefits of Training

Physiological differences between the "Fit" and the "Unfit" individual for a given physical activity; Benefits of Training.

Characteristics of the Fit Individual

At Rest

1 A somewhat lower heart rate
2 Somewhat lower rate and greater depth of breathing
3 Probably has developed new capillaries (especially at a high level of fitness)
4 Possibly a higher red blood cell count
5 Body adjusts better to changing environmental conditions--suffers less in heat
6 Doubtful if an increase in "alkaline reserve"
7 Better muscle tone or tonus -- greater strength in muscles, including respiratory muscles
8 Muscles richer in glycogen and creatine

During "Steady State" Activity

1 Heart rate less
2 Heart stroke volume greater
3 Greater cardiac output (minute volume)
4 Oxygen consumption less -- less minute-volume of breathing required
5 Breathing rate less and breathing depth greater
6 Return of heart rate to normal faster at end of activity
7 Return of blood pressure to normal faster at end of activity
8 Less rise in systolic blood pressure
9 Less rise in blood lactate.
10 Greater aid from "muscle pump"
11 Less rise in body temperature
12 Body adjusts better to environmental conditions -- suffers less from heat
13 Higher oxygen-carrying capacity of blood
14 Less rise in white blood cell count

Cross reference: p. 47

15 Circulorespiratory system more efficient in supplying oxygen to tissues and in removing metabolities

16 Increased diastolic blood pressure after activity

For Exhausting Work that Neither Can Sustain in a Steady State

1 Maximum heart rate about the same

2 Stroke volume greater

3 Greater cardiac output (minute volume)

4 Greater respiratory minute volume

5 Higher oxygen-carrying capacity of blood

6 Greater oxygen consumption because of #3, #4, #5

7 Rise in blood lactate less

8 Can withstand considerably higher lactate concentrate and thus can work longer before exhaustion

9 Greater oxygen debt (because of #8)

10 Less rise in temperature -- better able to regulate

11 Body adjusts better to environmental conditions -- suffers less from heat

12 Greater anaerobic energy reserves and greater utilization of them

13 Greater "deinhibition" of inhibitory controls -- more able to endure stresses (feelings of distress, etc.) because of being subjected to them more frequently (gets used to them); able to endure fatigue better

14 Nervous system more efficient in coordinating movements -- neutral pathways more often used

15 Better able to mobilize and transport fuel

16 Less destruction of red blood cells

17 Less rise in white blood cell count

18 Possibly greater amount of buffers in blood

19 Return of heart rate to normal faster after activity

20 Return of blood pressure to normal faster after activity

21 Higher diastolic pressure after activity

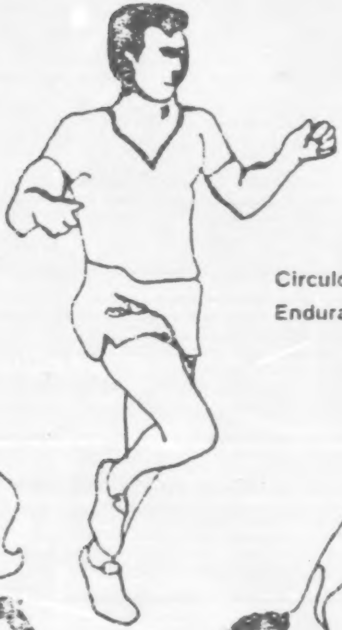
22 Breathing rate returns to normal faster

23 Even though greater oxygen debt it is "paid off" faster; therefore, return of lactate concentration to normal is faster.

Cross reference: p. 47

Health Related Fitness Components

Physical Fitness



Circulo Respiratory Endurance

Muscular Endurance

Flexibility

Strength

cross reference: p. 47

Appendix C

The Nebraska health-related agencies and organizations listed below have free or inexpensive materials available.

Hints on ordering materials:

1 Do not simply write the agency requesting "everything you have about ____________."

2 To help assure a fast response, request materials by correct title or name of publication, film, pamphlet.

3 Most of these agencies have a catalog or listing of materials they make available. Teachers should request a current catalog or materials list so they may identify titles, cost (if any), and if materials are available in classroom quantities.

Nebraska Heart Association, 3624 Farnam St., Omaha, Nebraska 68131.
--Pamphlets, wall charts and other printed material on heart physiology and heart problems; teacher and student resources.

American Cancer Society, Nebraska Division, 6910 Pacific, Overland Wolf Center, Suite No. 210, Omaha, Nebraska 68106.
--Printed materials on smoking and cancer; teacher resources.

American Lung Association of Nebraska, 7363 Pacific, Suite 212, Omaha, Nebraska 68114.
--Charts and other printed material on anatomy and physiology, smoking and disease control; teacher and student resources.

Nebraska Department of Public Institutions, P. O. Box 94828, State Capitol, Lincoln, Nebraska 68509.
--Printed materials on school health environment, mental health and chemical substances; teacher resources.

Nebraska Department of Health, 301 Centennial Mall South, Lincoln, Nebraska 68509.
--Printed materials on community health, dental health and nutrition; teacher and student resources.

Nebraska Society for the Prevention of Blindness, 120 South 42, Lincoln, Nebraska 68510.
--Printed materials on safety and school health services; teacher and student resources.

Nebraska Department of Education, 301 Centennial Mall South, Lincoln, Nebraska 68509.
--Printed materials on dental health, anatomy and physiology, consumer education and school health services; teacher and student resources.

Dairy Council of Central States, 6901 Dodge, Room 104, Omaha, Nebraska 68132.
--Posters, booklets and leaflets on nutrition and its relation to general and dental health; physical fitness and weight control; teacher and student resources.

NETCHE, Nebraska Telecommunications Center, P. O. Box 83111, Lincoln, Nebraska 68501.
--Various television segments on health-related topics. See concept pages for program titles.

Educational Service Units, various locations around Nebraska.
--Materials on values and audiovisual health materials.